# TEXTILE WORLD

FEBRUARY • 1944

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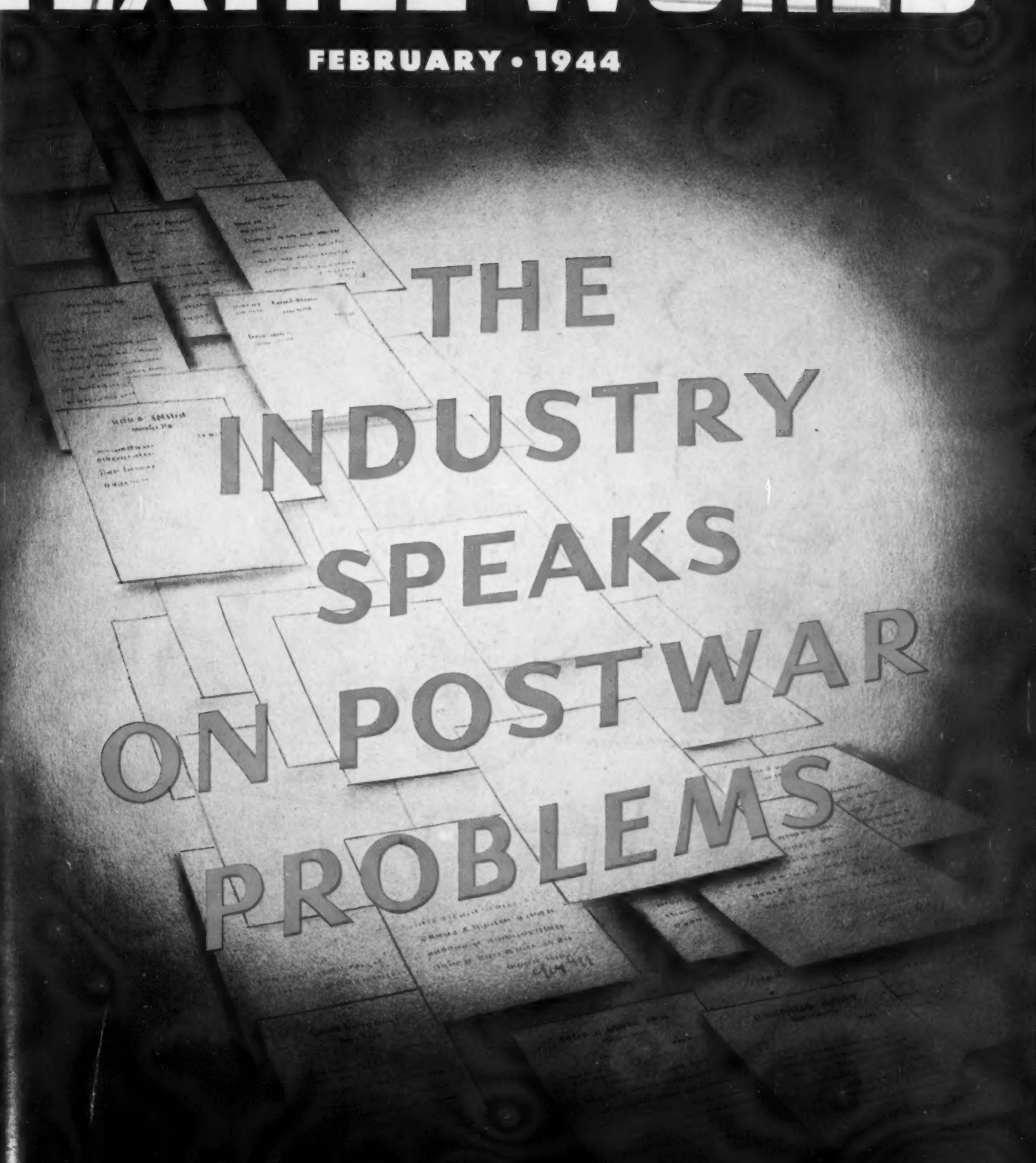

# THE INDUSTRY SPEAKS ON POSTWAR PROBLEMS

**ANNUAL REVIEW AND FORECAST NUMBER**

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Salute
TO THE U. S. MERCHANT MARINE
. . . and to those American Manufacturers who supply them with the finest of Clothing and Equipment.
COMMERCIAL FACTORS CORPORATION
Fred'k Vietor & Achelis, Inc. Established 1828
Schafer, Schramm & Vogel Established 1838
Peierls, Buhler & Co., Inc. Established 1893
TWO PARK AVENUE, NEW YORK
EUGENE G. LYNCH 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD WINSTON-SALEM, NORTH CAROLINA
BUY U. S. WAR BONDS

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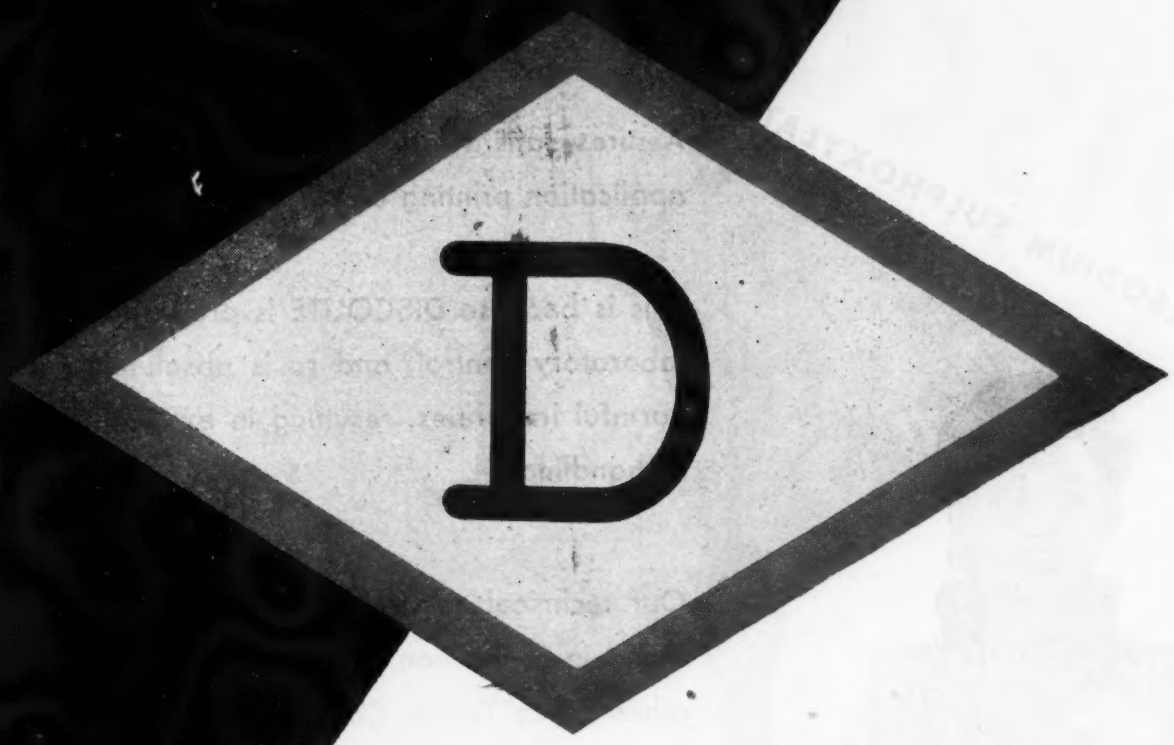
# Production of Textiles for War and

Essential Civilian Needs Must be Maintained but
Holding your operatives is a Big Problem
Every Possible Handicap to your
Workers Must be Avoided




## One Kind of Trouble

**You can Avoid is the Use of Mongrel Repair Parts Draper-made Parts Help out your Fixers—both new and old hands—by making it easier to keep the Looms properly set to Run Efficiently**

# DRAPER CORPORATION

FOR MILITARY OR CIVILIAN PRODUCTION

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# DISCOLITE*

**(SODIUM SULPHOXYLATE FORMALDE[illegible])**

Assures satisfactory results in both discharge and application printing of vat and direct colors.

This is because DISCOLITE is prepared under strict laboratory control, and so is absolutely free from harmful impurities, resulting in extreme cleanliness in handling.

Our technical service department is at your command in connection with the use of DISCOLITE and other Royce Textile Chemicals.

The uniform strength and purity of DISCOLITE are important for long runs and maximum efficiency. Build your formulas on DISCOLITE.
It rewards confidence.

## ROYCE CHEMICAL COMPANY

CARLTON HILL, NEW JERSEY

MANUFACTURERS OF HYDROSULPHITES, *VATROLITE, *DISCOLITE, *PAROLITE, ALSO *NEOZYME, *VELVORAY, *CASTROLITE, *FABRITEX AND *GUMOLITE
*REG. U.S. PAT. OFFICE

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# TEXTILE WORLD

FEBRUARY 1944 — VOLUME 94 NUMBER 2

A McGRAW-HILL PUBLICATION

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# The War Is Still On

**WE HAVE LEARNED** in recent weeks that thousands of American prisoners in Japanese-held territory are being grossly maltreated. Shall we delay their rescue by a single day?

Late in December Colonel Robert T. Stevens, formerly a prominent textile-industry executive and now deputy director of purchases for the Office of Quartermaster General, complained in a forceful public message that mills were beginning to turn a cold shoulder to Army contracts. The other day we asked our Washington office to inquire whether there has been a change in the situation. The report follows:

"There has been no noticeable improvement. Quartermaster officials, textile men themselves, are frankly disappointed in the lag of voluntary response to Colonel Stevens' appeal. They are sympathetic to the industry's problems and are hopeful that cooperation can be brought about on a voluntary basis. Failing this, however, mandatory measures could be invoked, which would give the industry no alternative but to comply. It is earnestly hoped in Washington that such steps can be avoided. Revised WPB Order M-317 is spreading a percentage of war orders equitably over the entire industry, but as yet it is not sufficient to cover Army requirements."

The Quartermaster Corps, on its part, is already taking steps to aid the mills and encourage their voluntary cooperation. "In order to avoid as far as possible the uncertainties pertaining to contract termination," the report continues, "they are placing as many contracts as possible on a 90-day basis, which would leave mills free to turn to other orders after that period if the pressure of Army needs should lessen." The Bureau of the Budget has already approved a simpler cost form and procedure for cotton goods and is making similar improvement for wool goods. An effort is also being made to put needed textiles higher on the production-urgency list to assure greater manpower.

**THERE HAS BEEN A NATURAL TENDENCY** in American industry, including textiles, to assume that the war (or at least war production) is almost over. Furthermore, it has been correctly recognized that post-war planning is both patriotic and good business and that it represents a welcome reversal of the old American tendency never to look far enough ahead. We cannot afford, however, and it is not necessary, to let either consideration interfere with full maintenance of the war effort as long as such effort is required. What Colonel Stevens said in December is still true: "We have a long, long way to go and a terrible price to pay before victory will be ours."

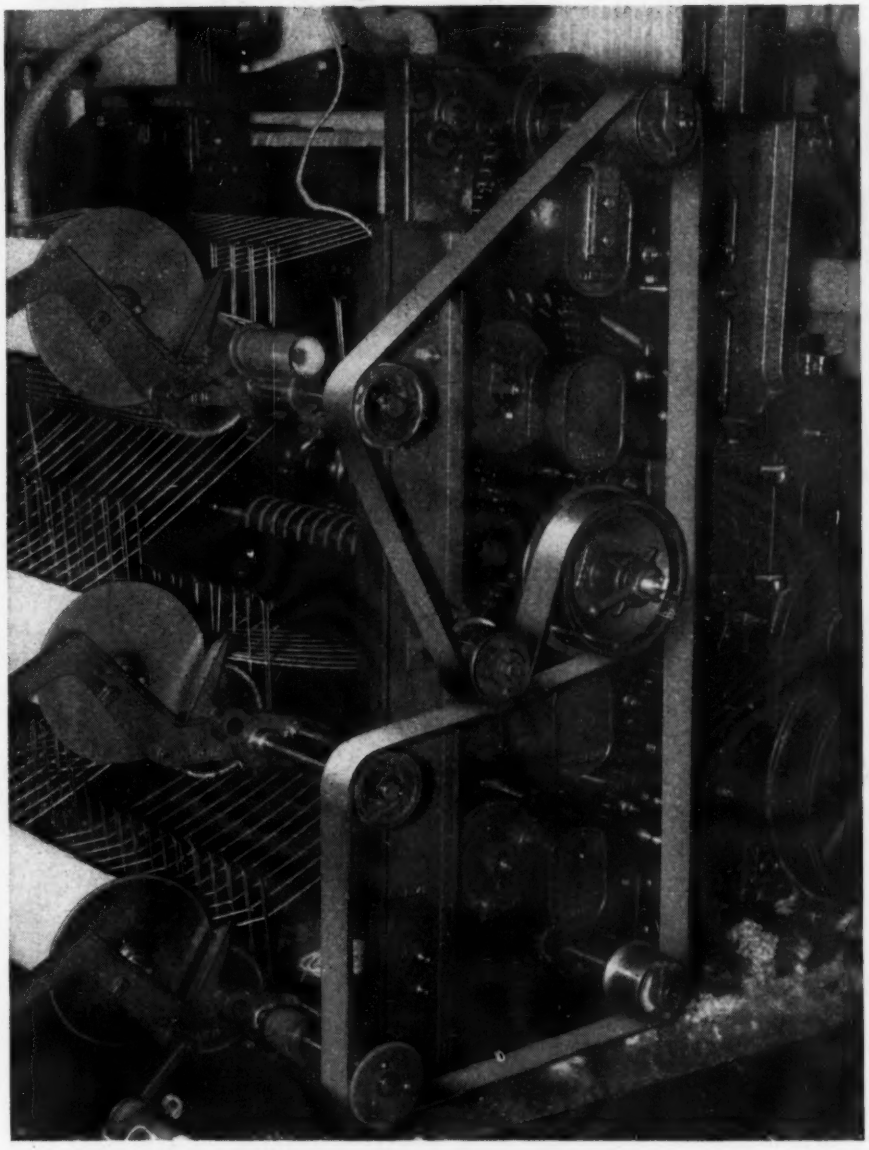
Armed-service contracts are renegotiable; and, since the average business executive has long been trained by peacetime economy to seek those orders which are most profitable, he is instinctively more receptive to those which cannot be renegotiated. But patriotism is good business too. If there were not patriotism somewhere by someone, our whole business structure would be tumbling to destruction, with the nation as a whole. It is not good business to prolong the war and so force our economy further and further out of gear, building up a tax burden which will strangle business enterprise for generations to come. We have failed to date in our attempt to correct the renegotiation program, which favors the manufacturer who produces for civilians as against the manufacturer who produces similar products for the armed forces; but our lack of success is no excuse for relinquishing full-hearted support to the war job.

**THE MORE OUR TROOPS ENGAGE IN COMBAT,** as in the Italian campaign, the more is the Army's need for herringbone twill, the supply of which is now said to be short by 10,000,000 yd. In mountains and in jungle terrain, where transportation is difficult, osnaburg becomes increasingly necessary for small bales—as the last huge directive for this fabric indicates. And so on through the list. The war is not only still on—from America's angle, it is growing more intense.

A bomber load of American citizens crashes in flames on German soil, while simultaneously the swing of a machine gun mows down American boys in Italy, and in the South Pacific a Japanese hit on a boat spells oblivion for other sons and perhaps daughters of Americans. Are we going to refuse the front-line protectors of our liberty and life what they need? Must we be compelled by Government edict to help them?

Edwin D. Fowle

# IN 4 WAYS *Tannate* LEATHER BELTING *proves its Economy*



**1—Great Efficiency**

**2—High Machine Output**

**3—Unusually Long Life**

**4—Low Maintenance**

**Here is one Typical Example of Tannate Economy**

A large southern cotton mill has been using heavy single TANNATE Watershed belting on Model E looms since about 1926. According to records which they kept, their average belt cost is less than $1.00 a year per belt.

Send for our Belt Length Calculator — figures belt length quickly and accurately. It's free.

The firm pulley grip of Tannate keeps machines producing at top capacity even under varying loads so more uniform work can be turned out with less spoilage and at a lower unit cost.

Tannate is an exceptionally strong belt, averaging ⅓ to ½ higher in strength than choice oak belting. Its great endurance quality results in a long lifetime of hard service. Little maintenance is needed to keep it in good running condition, however occasional applications of Rhoad's Belt Preserver is recommended.

Why not see what Tannate Leather Belting can do for you.

*Established 1702*

**J. E. RHOADS & SONS**

35 North Sixth Street, Philadelphia 6, Pa.

NEW YORK • CHICAGO • ATLANTA • CLEVELAND

**STEP UP PRODUCTION with RHOADS *Tannate* WATERSHED LEATHER BELTING**

## . . . TO GET A NEW *Finnell* FLOOR-MAINTENANCE MACHINE!

If your need for floor-maintenance equipment has not been met due to war-time restrictions, here is good news for you. *Finnell* is adopting the plan whereby those who have been unable to qualify for *a war-time priority* can avail themselves of *a post-war priority* that will assure earliest delivery possible to those who act now!

The plan is simple. In fact all that is required is to request *Finnell* to assign you a priority number. That will give you a *preferred listing* for early post-war delivery of a new *Finnell*—the model and size to be determined through a free floor survey of your needs at the time. This involves no obligation to buy,—the established priority may be used or not used, as you choose. Deliveries will be made according to confirmed priority numbers.

For more information and literature on *Finnell* machines, phone or write nearest *Finnell* branch or Finnell System, Inc., 1902 East St., Elkhart, Ind.

*Let's All Back the Attack – With War Bonds*

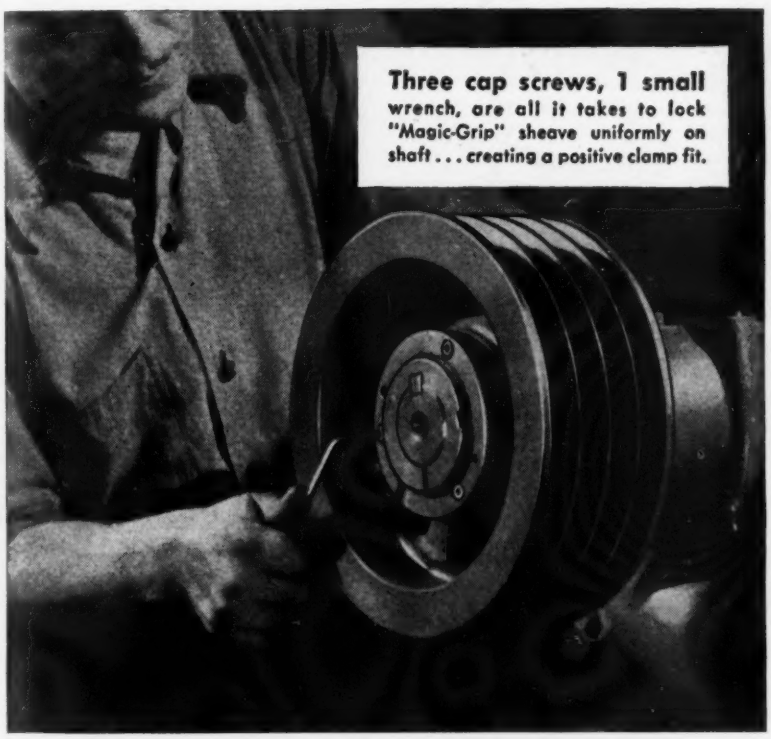
**FINNELL SYSTEM, INC.**

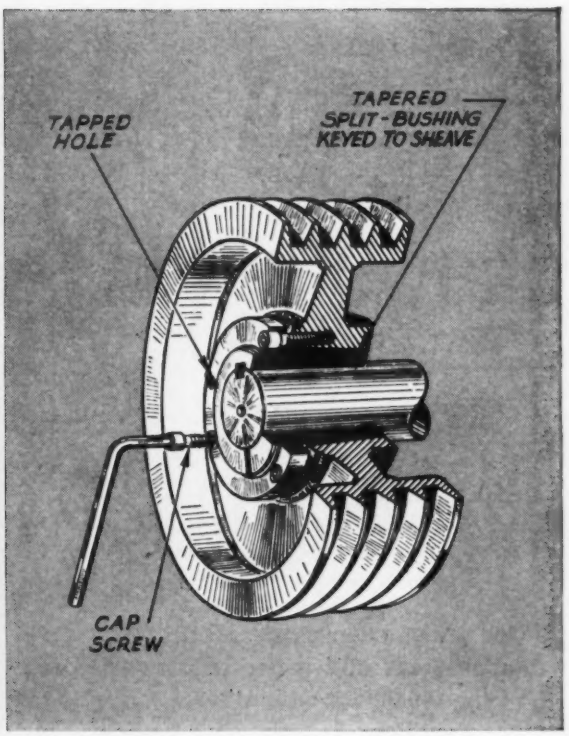
*Pioneers and Specialists in*

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

# Allis-Chalmers announces a new Sheave that "Grips like Magic!"


Three cap screws, 1 small wrench, are all it takes to lock "Magic-Grip" sheave uniformly on shaft . . . creating a positive clamp fit.




We call it "Magic-Grip" because in just one quick operation sheave locks securely to shaft, saving man-hours and downtime!

DESIGNED for ease and speed in mounting and removing, Allis-Chalmers' great new "Magic-Grip" is the fastest mounting sheave on the market. Its tapered split bushing locks sheave to shaft in a single operation . . . *without forcing.*

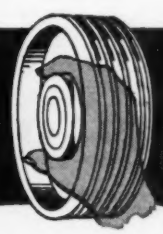
"Magic-Grip" assures smooth running action, too. Its new design permits sheave to be mounted close to motor — reducing shaft overhang, increasing bearing life.

And you get these extra advantages *at no increase in price.* Now, more than ever, it pays to make Allis-Chalmers your "V-Belt Headquarters."

Sheaves that "grip like magic" are stocked in a complete line in all major cities. Ask our district office or dealer for bulletin B6310. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 1680

Allis-Chalmers Texrope



"MAGIC-GRIP" SHEAVES

## *From Cost-minded Mills*

# THE SAME STORY YEAR AFTER YEAR!

**1930** "... the cards will run almost indefinitely without stripping ... we expect to send you an additional order." *

**1936** "... we feel you are conservative in your claims." *

**1940** "... we are very well pleased with the performance of this equipment ... we have found definite savings as well as more uniform work." *

**1943** "... they have paid for themselves many times over ... we could not get along without them." *

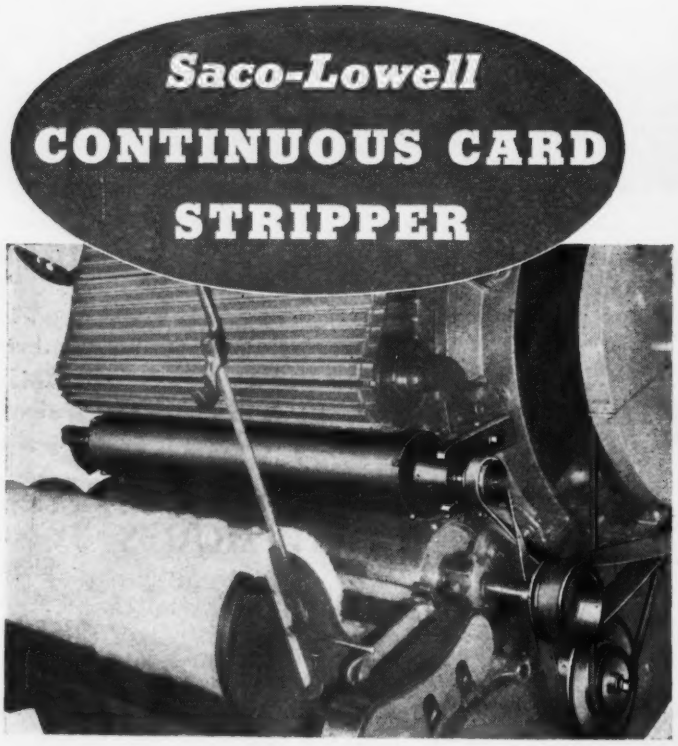
* Names on request.

The satisfaction expressed in these statements from mill superintendents is proof of the efficiency and proven performance of the Saco-Lowell Continuous Card Stripper. Its many practical and important advantages may be summarized as follows:

1. Saving of Cotton
2. Increased Production
3. Improvement in Quality of Yarn
4. Cleaner Card Room
5. Saving in Labor Cost
6. Reduction in Power Consumption

The Saco-Lowell Continuous Card Stripper is easily and quickly installed on all Saco-Lowell Cards ... and in many cases on those of other manufacturers.

Write for bulletin giving complete details.




## SACO-LOWELL SHOPS

**60 Batterymarch Street, Boston, Massachusetts • Charlotte Greenville Atlanta**

One million Goodyear Steel Cable V-Belts — now smashing all performance records on the toughest drives in industry and on military equipment — prove this Goodyear development to be the most efficient, longest-lived, most perfectly matched, Heavy-Duty Belt that ever turned a Multi-V drive. It handles drives no other type V-Belt will pull! Ask the G.T.M. — Goodyear Technical Man.
GOODYEAR INDUSTRIAL RUBBER PRODUCTS
GTM - Specified STEEL CABLE V-BELT for Multi-V drives
1. Heavy, super-tough black cover with uniform friction, longer life
2. Load-carrying, endless, steel cables in neutral plane
3. Tension and compression sections of high-quality rubber
GOODYEAR
THE GREATEST NAME IN RUBBER
★ LET'S ALL BACK THE ATTACK — WITH WAR BONDS ★

RUBBER SHATTERS LIKE GLASS

OIL CONGEALS,
GASOLINE FREEZES

# 100 DEGREES BELOW ZERO!

Going down! Zero . . . 10 below . . . 50 below . . . 100 below . . . and still going! Not in a scientist's laboratory, but in everyday life . . . in industry.

Far-below-zero temperatures have been put to work. Machine parts are shrink-fitted together by the application of extreme cold to one of the parts. Methods of marketing food are being changed by new high-speed freezing processes.

Refrigerated test chambers are teaching men and airplanes how to fly in those strange and frigid atmospheres . . . the troposphere and the true stratosphere.

Today sub-zero temperatures . . . produced by General Electric Industrial Refrigeration and Air Conditioning equipment, are working in hundreds of ways to help speed up America's war effort . . . to help machines work more efficiently.

Tomorrow, when war clouds lift, these new techniques will bring benefits to all in flexible, efficient air conditioning and commercial refrigeration equipment . . . from General Electric.

*General Electric Co., Air Conditioning and Commercial Refrigeration Divisions, Section 442, Bloomfield, New Jersey.*

☆ BUY WAR BONDS ☆

METALS SHRINK
WATCHES STOP

*Industrial Refrigeration by*

**GENERAL ELECTRIC**

FOOD FREEZES
INSTANTLY

Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA," Sundays 10 P. M., EWT, NBC..."THE WORLD TODAY" News, Every Weekday, 6:45 P. M., EWT, CBS

# There is ENOUGH CLOTH

in America's textile mills and clothing stores to keep our millions warm and healthy, even after we equip our warriors and supply our allies overseas.

For this, America and the United Nations are grateful . . .

—grateful to the Gods of the Harvest.

—grateful to the courageous and resourceful chemists, wool growers and cotton farmers.

—grateful to the makers of textile machinery who designed and manufactured so well, often with generous use of New Departure ball bearings, that many machines have been able to run at twice normal operating time for more than three years.

3222

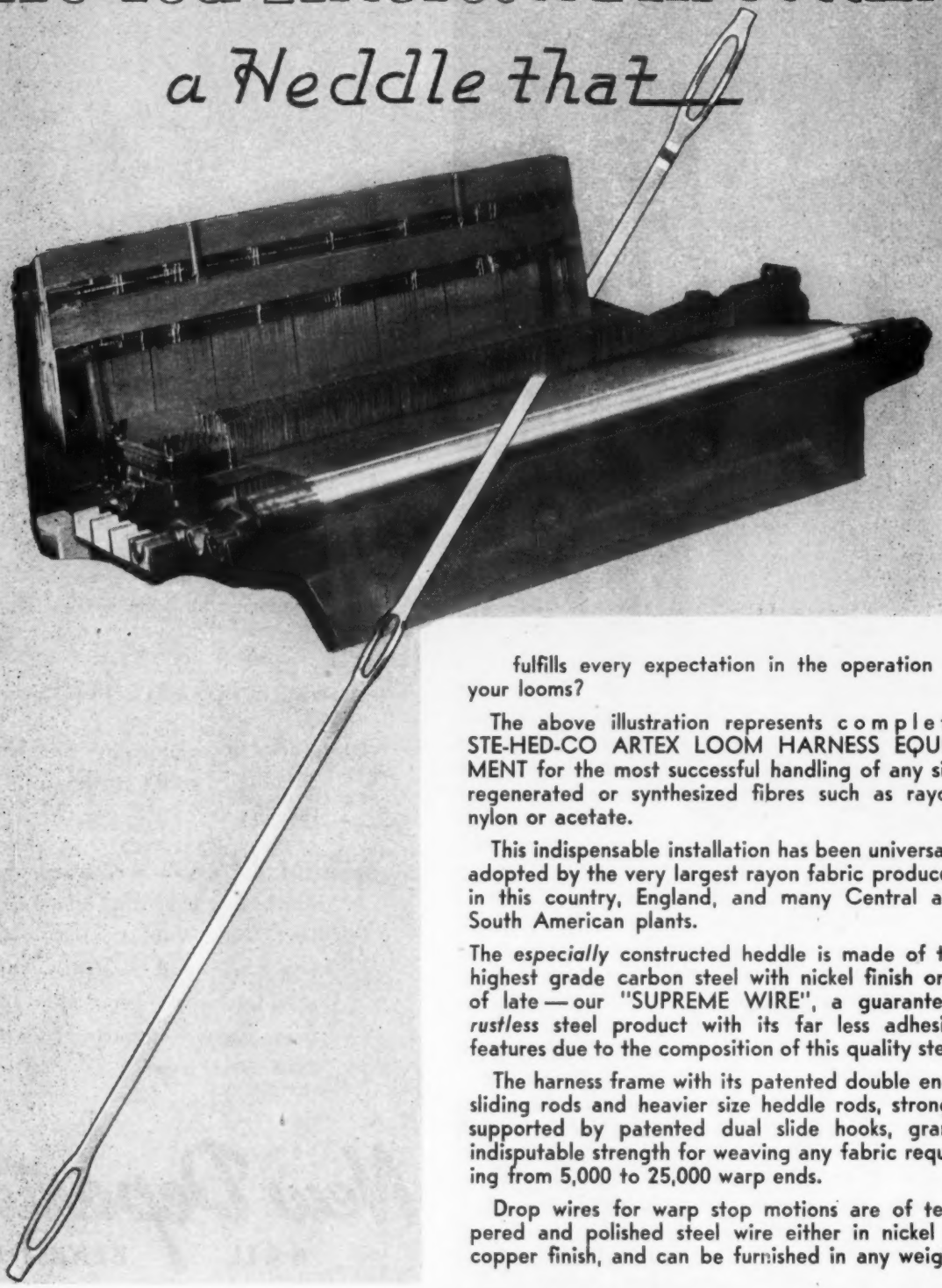
**New Departure**
**BALL BEARINGS**

*Nothing Rolls Like a Ball*

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

# Are You Interested In Getting

## a Heddle that



fulfills every expectation in the operation of your looms?

The above illustration represents complete STE-HED-CO ARTEX LOOM HARNESS EQUIPMENT for the most successful handling of any size regenerated or synthesized fibres such as rayon, nylon or acetate.

This indispensable installation has been universally adopted by the very largest rayon fabric producers in this country, England, and many Central and South American plants.

The *especially* constructed heddle is made of the highest grade carbon steel with nickel finish or—of late—our "SUPREME WIRE", a guaranteed *rustless* steel product with its far less adhesive features due to the composition of this quality steel.

The harness frame with its patented double ends, sliding rods and heavier size heddle rods, strongly supported by patented dual slide hooks, grants indisputable strength for weaving any fabric requiring from 5,000 to 25,000 warp ends.

Drop wires for warp stop motions are of tempered and polished steel wire either in nickel or copper finish, and can be furnished in any weight.

**Buy complete STE-HED-CO ARTEX LOOM HARNESS EQUIPMENT to obtain 100% results.**

# STEEL HEDDLE MFG. CO.

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*Manufacturers of Superior*

FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

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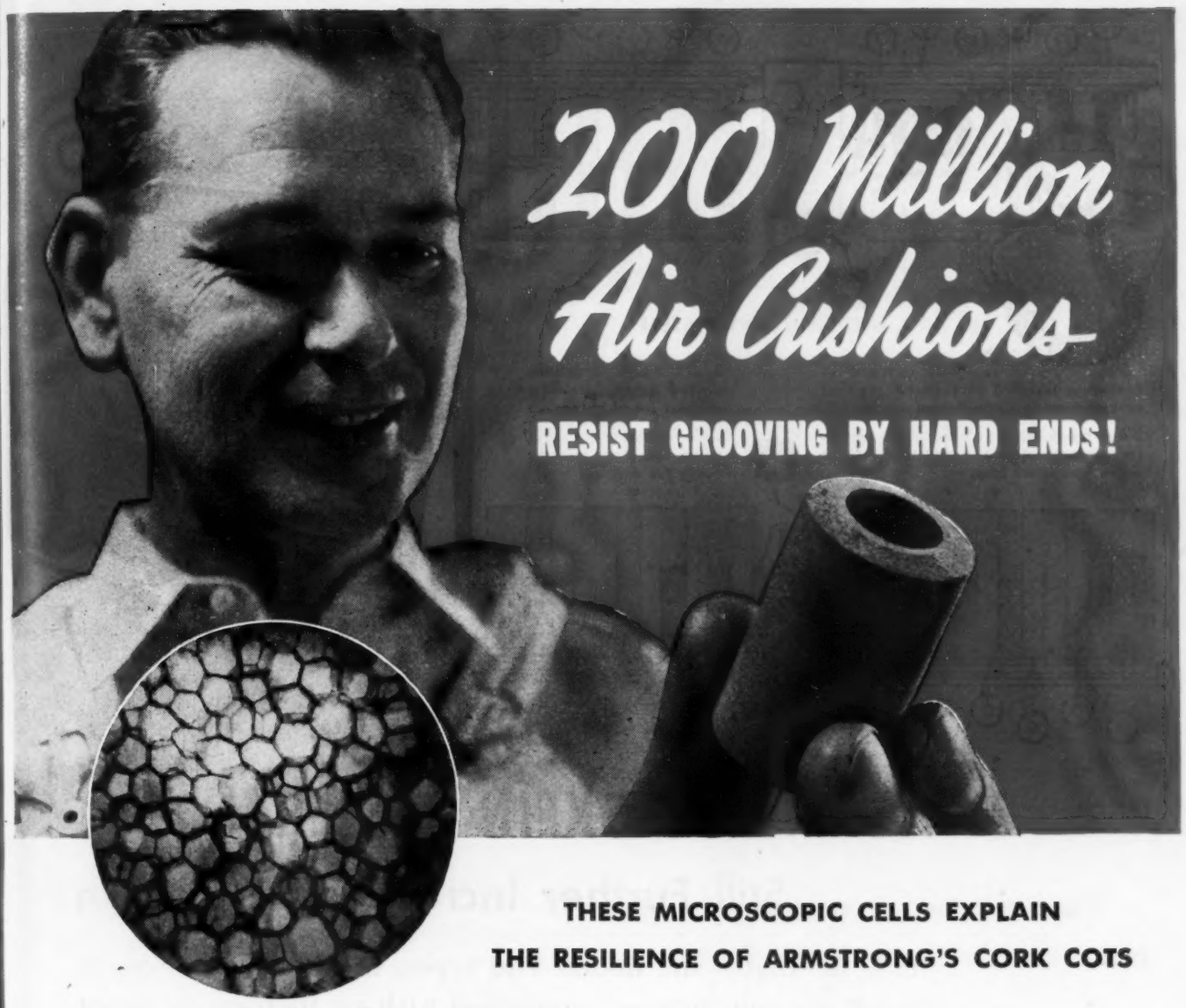
FIELD ENGINEERS IN EVERY DISTRICT




## THESE MICROSCOPIC CELLS EXPLAIN THE RESILIENCE OF ARMSTRONG'S CORK COTS

THERE'S an interesting reason why Armstrong's Cork Cots are so resilient, so resistant to "creasing" by hard ends. It's cork's tiny, air-filled cells—200 million of them to the cubic inch! When a hard end runs through the rolls, the air in these cells compresses. As the pressure is released, the cells tend to expand quickly to normal size. Rarely will the cot be deeply grooved—but should this happen, the surface can easily be rebuffed back to normal condition.

Rebuffing can also be used to add three to four extra service lives to Armstrong's Cork Cots when, after long initial service, they begin to show signs of normal wear. Each reconditioning can be done for as little as one-half cent per roll!

Besides these advantages of resilience and durability, there's the *superior friction* of Armstrong's Cork Cots. Their excellent "grip" helps produce uniform drafting, with a minimum of slippage, and eliminates eyebrowing by placing waste well back on the clearer boards where it belongs.

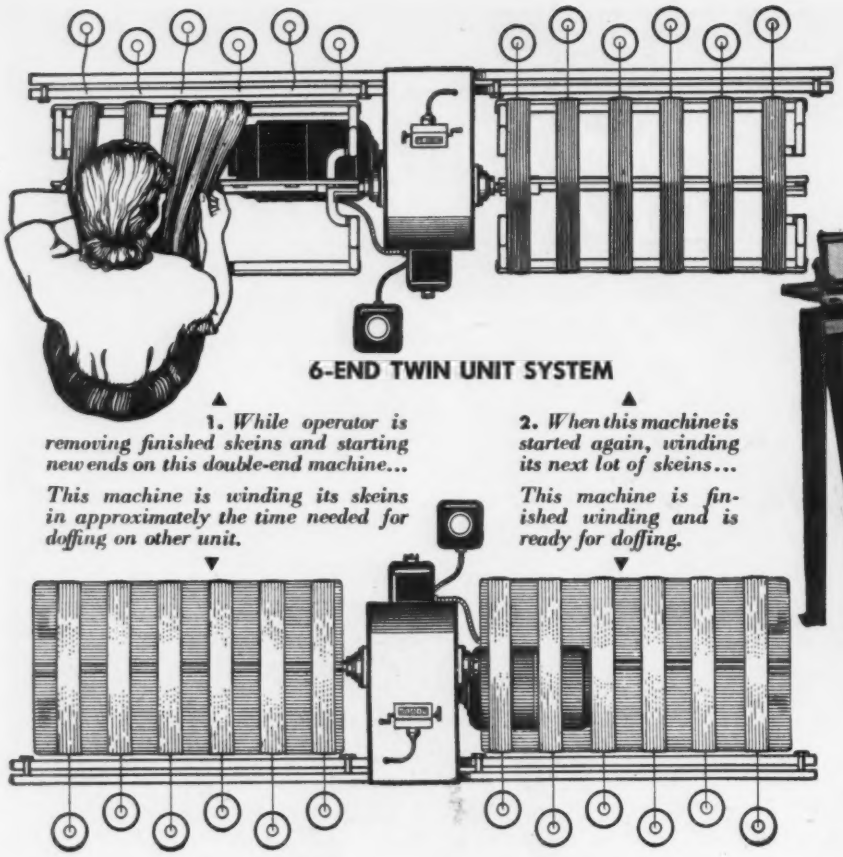
Why not investigate the advantages of using Armstrong's Cork Cots in *your* mill? Send for your free copy of the 16-page booklet, "Modern Textile Roll Coverings." Write Armstrong Cork Co., Textile Products Section, 8302 Arch Street, Lancaster, Penna.

**BETTER RUNNING WORK**
**— MORE POUNDAGE**

**ARMSTRONG'S CORK COTS**

ACCOTEX COTS* • ACCOTEX APRONS*

* SYNTHETIC RUBBER



6-END TWIN UNIT SYSTEM

1. *While operator is removing finished skeins and starting new ends on this double-end machine...*

*This machine is winding its skeins in approximately the time needed for doffing on other unit.*

2. *When this machine is started again, winding its next lot of skeins...*

*This machine is finished winding and is ready for doffing.*

9-END SINGLE UNIT

# FIDELITY 9-SKEIN REELER

## Still Further Increases Production

**Made in single- and double-end types, the FIDELITY 9-Skein Reeler lets you increase production with no increase in power consumption.**

**Doffing can usually be maintained on a one-minute cycle, on Twin-Unit System. Operators keep "on top of the work" with less fatigue; collapsible arms on reel make doffing a simple one-arm movement. Automatic yardage control relieves operator of strain of watching the winding reels. It stops when required yardage is skeined.**

**Operator starts new ends on one machine, then turns to doff facing reeler without waiting.**

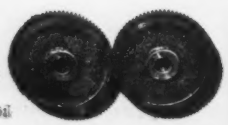
***Result: higher output and lower cost.***

**Write for new Bulletin R-141.**

*Builders of Textile Machinery, including Circular Knitting Machines, Skein Reelers, Backwinders, Fidelity-Rolandé Course Counters and Universal Ribbers*

ARMY E NAVY

33 YEARS' EXPERIENCE



**FIDELITY MACHINE COMPANY**

3908-18 Frankford Ave., Philadelphia 24, Pa.

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

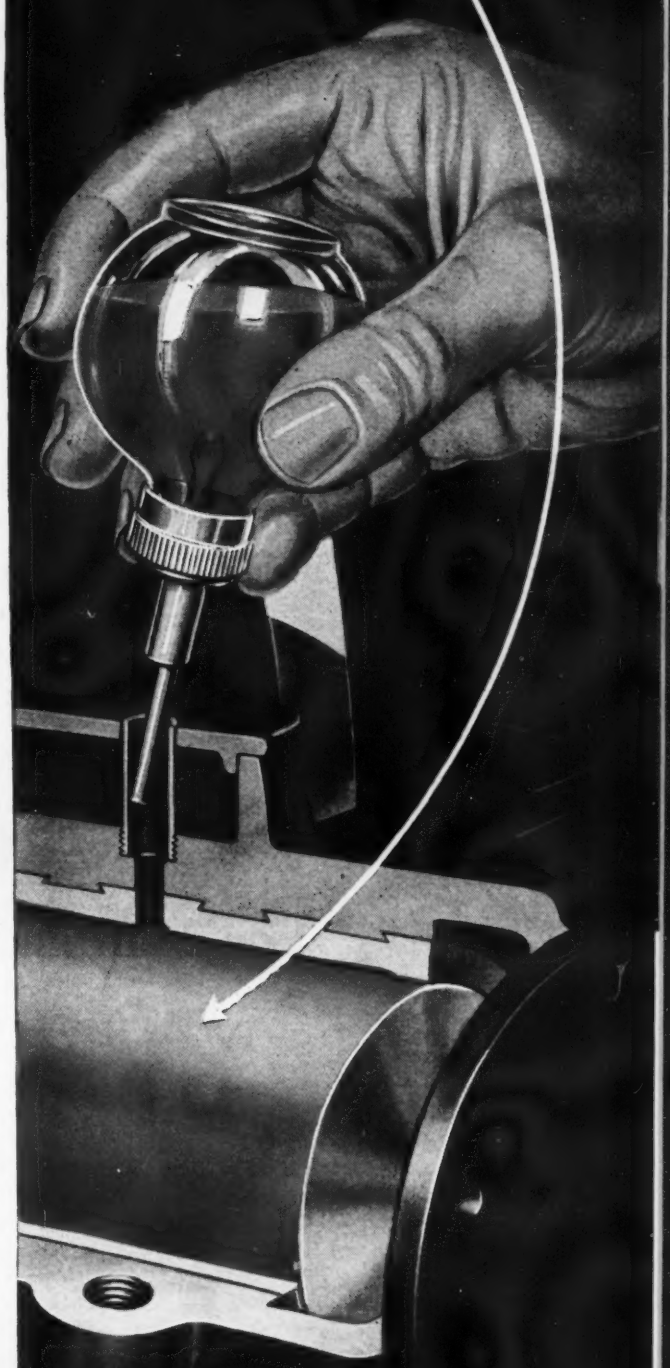
ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

HOW TO SOLVE OPERATING PROBLEMS WITH *Correct Lubrication*

# Big Power Savings

## START HERE

EVER COUNT THE NUMBER OF BEARINGS IN YOUR MILL?



ON top rolls...on drawing frames... twister rings, looms, cards, and weaving machinery!

Almost everywhere you look in your textile plant, there are bearings of some kind. And every one of these bearings is using oil to reduce friction and power loss and prevent destructive wear.

Add them all together and you can't help but appreciate the total savings involved in using the right all-purpose oil.

Through long experience serving textile mills, Socony-Vacuum offers Gargoyle Vactra Oils as the answer to this multiple-bearing problem. These Vactra Oils possess a strong attraction for metals and so provide extremely persistent films for all-loss systems. They resist wiping and rupture to keep friction, power loss, and wear down to the minimum.

Get in touch with your Socony-Vacuum man today and get these Vactra Oils in your mill.

**Socony-Vacuum Oil Co., Inc.**

Standard Oil of New York Division, White Star Division, Lubrite Division, Chicago Division, White Eagle Division, Wadhams Division, Magnolia Petroleum Co., General Petroleum Corp. of Calif.

GARGOYLE Lubricants

CALL IN SOCONY-VACUUM

# L. F. Dommerich & Company

*Executive and General Offices*

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

# FACTORS

## For Manufacturers and Merchants

*Inquiries as to our services solicited*

•

ESTABLISHED 1840

**SANDOZ PRESENTS** *the color achievement of the month*

# *Beauty* BY BOTANY

Sandoz shares in the responsibility for the lovely colors which are so admired in the products of the Botany Worsted Mills.

To Botany and other fashion leaders of America, Sandoz furnishes a broad range of acid, chrome direct and other dyes for all natural and synthetic fibers.

Among the acid colors are a large number of patented Sandoz products which are level dyeing and very fast to light and wear—and well suited to piece dyeing. Then, for men's wear fancy fabrics, Sandoz offers a group of milling colors that are fast to wet processing and can be applied to wool raw stock, worsted tops and yarn dyeing in package machines.

Among outstanding examples of the way Sandoz "thinks ahead with textiles" are the Brilliant Alizarine Milling Blues, BL, G, and SL. No other Blues on the market combine fastness to light *and* fulling to such an unusual degree. Other Sandoz-developed products . . . Metomega Chrome Colors . . . Cerol TGI . . . are also the result of the thoughtful research of Sandoz technicians and laboratories to solve specific problems.

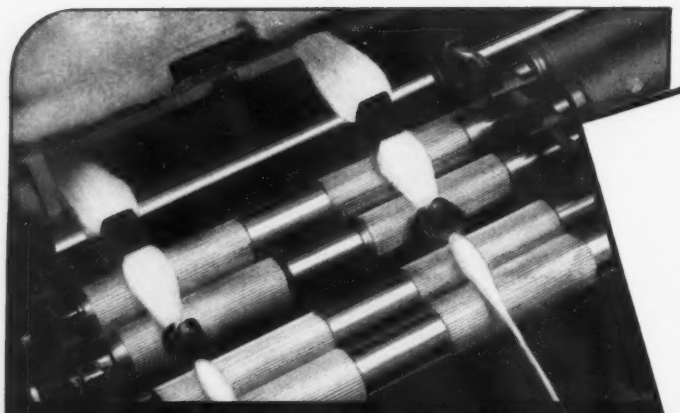
Sandoz application laboratories are maintained in New York, Boston, Philadelphia, Charlotte, Los Angeles and Toronto; stocks are carried in these cities. There are also Sandoz branches in Chicago, Paterson and Providence.

Watch for another Sandoz "Color Achievement of the Month"—saluting another Sandoz customer among the leaders of the Textile Industry. It will appear next month.

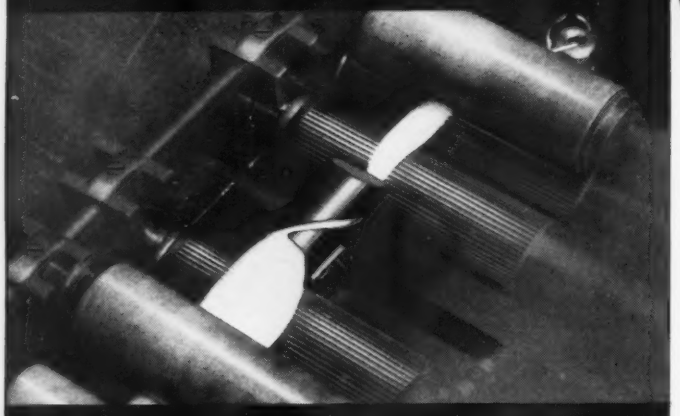
SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

**SANDOZ** *thinks ahead with textiles*

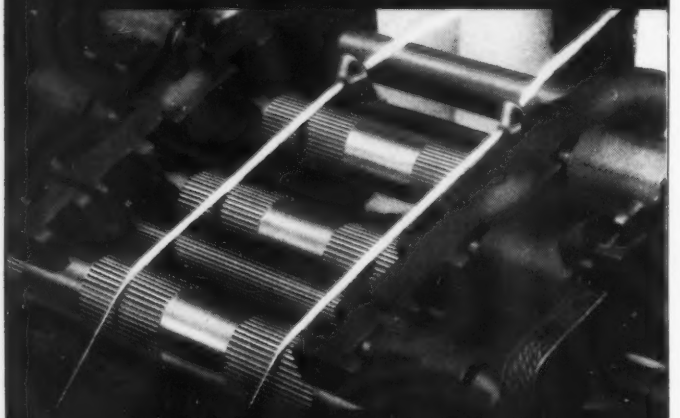
S SANDOZ



H & B 4-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER



H & B 5-ROLL HIGH-DRAFT ROVING SYSTEM
WITH PATENTED SCROLL CONDENSER



H & B 4-ROLL HIGH-DRAFT SPINNING SYSTEM

# PUT THESE *on Your Victory List*

WHEN victory comes many mills will have to replace worn out equipment. Others will have to modernize, regardless of the condition of their equipment, in order to put costs on a competitive basis. Not all these mills can be taken care of at once. The demand for new machinery will be greater than the supply for several years.

Start a "victory list" now of the new equipment you will need and consult with us regarding your requirements so we can put you on our victory list.

A good way to put your spinning department on an efficient, low cost basis quickly and with a comparatively small investment is to install H & B High-Draft Roving and Spinning. These systems can be supplied complete with new frames or can be adapted to any make of standard frame. Change over installations require a relatively short time and the cost is surprisingly low.

Upkeep and maintenance are also low because the systems are SIMPLE, — no belts, easy to clean, easy to operate and readily adjusted, while the quality of the product equals that of any other system on the market.

Power savings will also be important, because of the great reduction in the number of spindles required.

Ask our nearest representative to call.

**H & B AMERICAN MACHINE COMPANY**

**PLANT AT PAWTUCKET, RHODE ISLAND**

BOSTON OFFICE: 161 Devonshire St.; ATLANTA OFFICE: 815 Citizens & Southern National Bank Bldg.; CHARLOTTE OFFICE: 1201-3 Johnston Building
EXPORT DEPARTMENT: United States Machinery Co., 115 Broad St., New York, U. S. A.

# POWER TO LIFT A TANK in the palm of your hand!

★ It weighs less than 4 pounds. It's so compact you can hold it in the palm of your hand. But it delivers enough pressurized power to lift a General Sherman tank. That's the amazing, new PESCO Pressure-Loaded Hydraulic Pump!

Never, until PESCO engineered it for modern aviation, was there so small a pump of equal displacement capable of delivering 3000 p.s.i. Radical improvements in design plus precision manufacture of the highest order are the ingredients.

Through PESCO design, entirely new opportunities are opened up for the more practical and efficient use of hydraulics in your product or plant. And that goes for controlled liquid flow as well as pressurized power. For PESCO's advanced design and performance extends through a complete line of hydraulic, pneumatic, vacuum and fuel pumps and pumping systems. Practically without exception, the precision equipment PESCO makes has been engineered to specifications of performance never dreamed of before modern aviation.

We would welcome the opportunity to tell you of our facilities to engineer PESCO equipment to meet your own specific problem. PESCO Engineering Service is available to you. Just write.

**SEND FOR THIS BOOK** "Pressurized Power and Controlled Flow by PESCO". This book pictorially tells the story of PESCO equipment, manufacturing facilities and engineering service. A copy will be mailed promptly upon request.

**WRITE TO...**
**PESCO Products Co.**
*Industry Service O*
**11610 Euclid Avenue**
**Cleveland 6, Ohio**

*Division Borg-Warner*

In Precision Hydraulics, Fuel Pumps, Air Pumps, Related Accessories . . .
PERFORMANCE POINTS TO Pesco FIRST

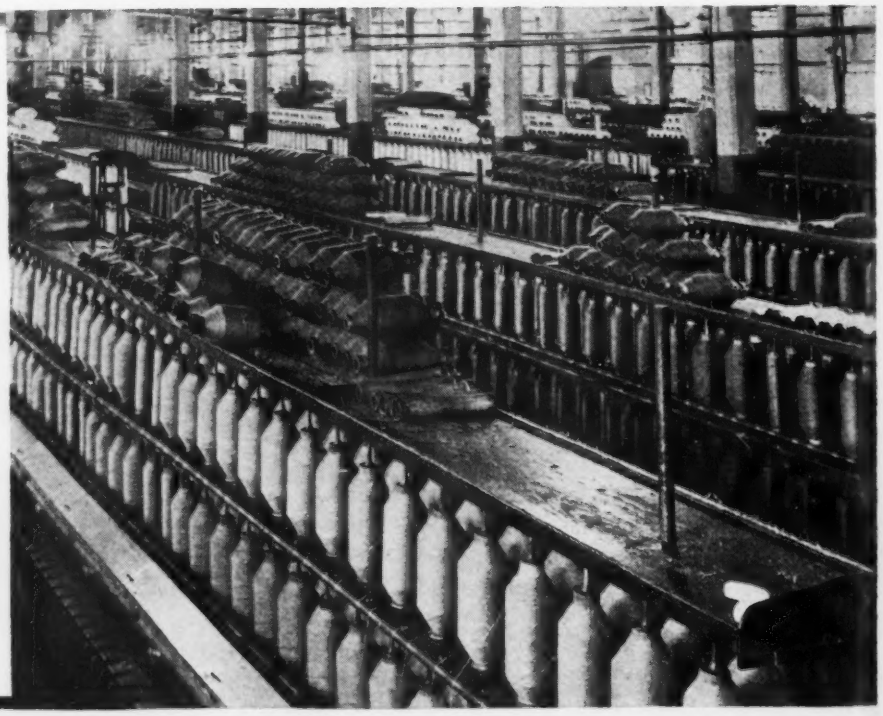
**AIR ALERT** *over there* relies on alertness *here!* To keep *TEXTILE* production equal to wartime demands use . . .

*Official U. S. Army Signal Corps Photograph*

**. . . . . SINCLAIR LUBRICANTS . . .**

Lily White Oils give long-lasting, no-drag lubrication at all spindle speeds. No-Drip Lubricants are creep-resistant and enduring on top rolls. Bearing Grease AF for plain bearings has the additional quality of being *color neutral* and *water soluble*. Sinclair *Knitting Machinery Oils* meet highly specialized requirements.

*(Write for "The Service Factor"—published periodically and devoted to the solution of lubricating problems.)*



# SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY (INC.), 630 FIFTH AVENUE, NEW YORK 20, N. Y.

GRATON AND KNIGHT

# ...Because "Research" gives you

## THE 3 BIG ADVANTAGES OF QUALITY + LEATHER

**MORE PRODUCTION,** because leather's superior traction, which improves with age, means more power delivered . . . greater average machine production.

**LESS MAINTENANCE,** because leather has natural "give-and-take" to handle shock loads without undue strain on belt or equipment.

**LONGER LIFE,** because the tough, interlocking fibres of leather have high resistance to both surface wear and internal friction.

## and

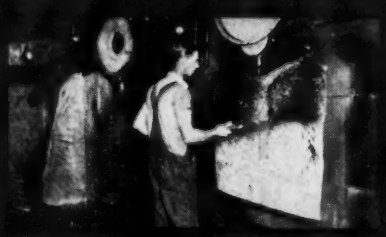
## 3 EXCLUSIVE FEATURES OF "RESEARCH" + BELTING

**MOST PRODUCTION,** because "Research" currying, added to leather's superior traction, creates highest frictional surface. 3% more production guaranteed.

**LEAST MAINTENANCE,** because G&K's prestretching process removes non-elastic stretch, resulting in fewer take-ups. Tensile strength is also increased 15%.

**LONGEST LIFE,** because precise, weight-controlled lubrication of fibres develops extremely long life. "Tension-Cementing" insures against ply separation.

## YOU'LL GET AT LEAST 3% MORE PRODUCTION ...2 to 4 TIMES LONGER LIFE...ON LONG OR SHORT CENTERS



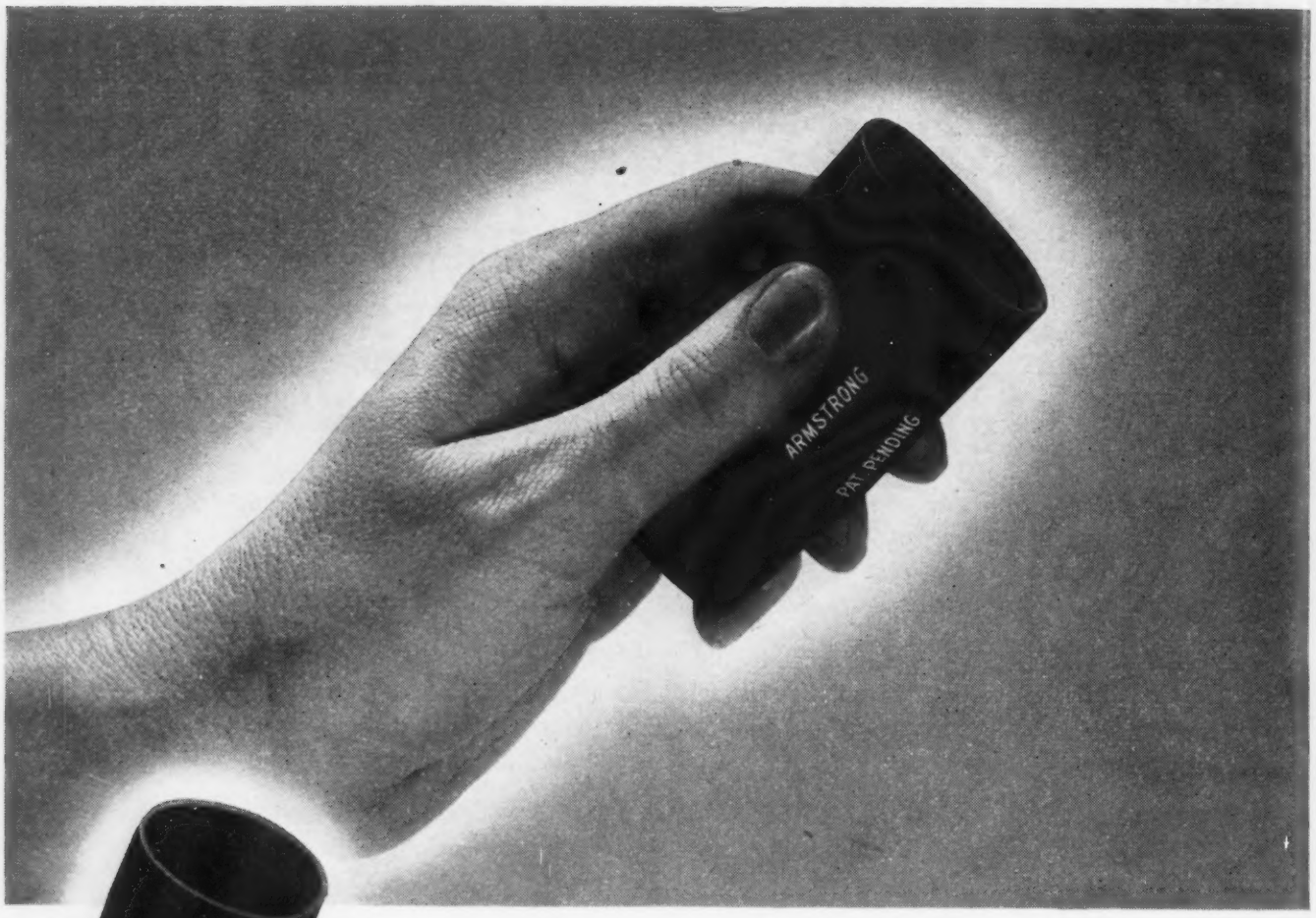
## GRATON & KNIGHT COMPANY

WORCESTER 4, GRATON AND KNIGHT MASS.

Graton & Knight is the only leather belting manufacturer with complete nationwide service facilities. Branches in Chicago, Cleveland, Dallas, Detroit, Kansas City, Minneapolis, New York, Philadelphia, St. Louis, San Francisco; distributors in all industrial centers.

*Look under "Graton & Knight" in Belting section of Classified Telephone Directory or THOMAS' REGISTER.*

# NON-STRETCHING!



## *Armstrong's Accotex Long Draft Aprons help you maintain proper roll settings*

YOU know the importance of proper roll settings in producing strong, uniform yarn. You can *maintain* those settings if you use Armstrong's Accotex Aprons. For these long draft aprons are reinforced with a strong interliner that eliminates loss of operating efficiency due to stretching.

Besides being non-stretching, Accotex Aprons offer these six additional advantages . . .

**1. LONG LIFE:** Accotex Aprons in continual service for more than two years show little sign of wear!

**2. UNIFORM:** All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.

**3. CLEAN-RUNNING:** Accotex Aprons do not crack or scuff. Thus they assure cleaner-running work and less waste.

**4. REDUCE LAPPING:** Accotex Aprons are not affected by temperature or humidity. They perform with minimum lapping.

**5. GOOD FRICTION:** The efficient "grip" of Accotex Aprons keeps slippage at a minimum.

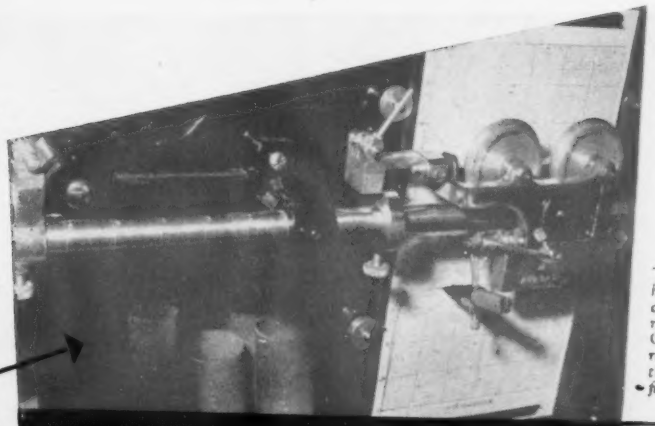
**6. SEAMLESS:** They have no seams to break open and shorten service life.

To find out how *your* mill can benefit by all these advantages of Accotex Aprons, write today for free samples. For interesting information about Armstrong's other products for textile mills, write for your free copy of the sixteen-page booklet, "Modern Textile Roll Coverings." Armstrong Cork Company, Textile Products Section, 8302 Arch Street, Lancaster, Pennsylvania.

**ARMSTRONG'S ACCOTEX APRONS**

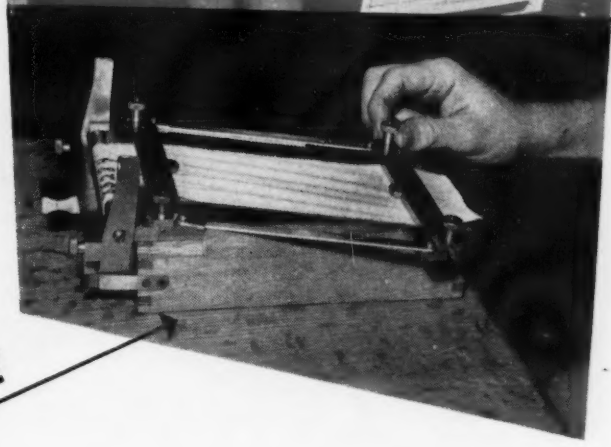
CORK COTS · ACCOTEX COTS

**how strong is a thread?**



*This Scott Serigraph, housed in its own specially air-conditioned room at Monsanto's Central Research Laboratories, tests and records the tensile strength of fine threads, filaments.*

**how soft is a fabric?**



*This Planoflex, developed at the U. S. Bureau of Standards for A.S.T.M., evaluates the hand of fabrics by measuring accurately the point at which twisting causes wrinkles.*

Give him the thread or the fabric, and many a good, experienced textile man will estimate the answers to the questions above with surprising accuracy.

But as the manufacture of textiles has grown from a highly skilled craft to an exact science, you need more than an estimate, no matter how shrewd and knowing. Even in evaluating such an elusive quality as the hand of a fabric, you need *exact* measurements, expressed in the *exact* language of the laboratory.

That's why you will find scores of specialized testing instruments in Monsanto's textile laboratories to supplement the skill and experience of the specialists who direct Monsanto's textile research and technical service.

Some are precise and delicately balanced works of the instrument maker's art—like this Scott Serigraph for testing the tensile strength of fine threads. Others are simple but highly practical devices of the textile researcher's ingenuity—like this Planoflex for evaluating the "feel" of a fabric.

Simple or complex, however, *all* are at *your* service . . . to help you solve today's problems . . . or to help you work towards tomorrow's production of *better* fabrics *cheaper*. MONSANTO CHEMICAL COMPANY.

*Divisions cooperating in Monsanto's integrated research and technical service program for the textile industry: Organic Chemicals Division, St. Louis; Phosphate Division, St. Louis; Plastics Division, Springfield, Mass.; and Merrimac Division, Everett Station, Boston 49, Massachusetts. Inquiries should be addressed to Merrimac Division.*

MONSANTO
CHEMICALS AND PLASTICS

*The Textile*
SERVING INDUSTRY
WHICH SERVES MANKIND

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

## *A Production Problem Solved -*

**• • • THIS IS THE IMPORTANT FACT!**

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles ?

| | |
|---|---|
| ***Important Defense Items by SARGENT*** | Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns |

**C. G. SARGENT'S SONS CORPORATION**

Graniteville, Massachusetts, U.S.A.

Winning out over difficulties is both typically American in spirit . . . *and good business!* Faced with war-made shortages of many chemicals formerly considered essential to their production, many manufacturers are finding that they can make the best of the situation by making the most of Cyanamid's timely developments in non-critical replacement materials.

Some of these are new. Others are "old stand-bys" for which new uses have been found. *All* have definite contributions to make . . . the values of which may well extend beyond the present emergency and provide the means for new manufacturing and processing developments.

If you are confronted with a problem arising out of limitations or non-availability of chemicals and textile specialties, you will find a helping hand extended your way from the direction of Cyanamid. For it is part of our wartime job not only to step-up output of chemicals essential to war production, but to help fill the "gaps" in chemical supplies wherever possible for home front needs.

We will be glad to work with you on the solution of your problem. There is no obligation.

---

**AMERICAN CYANAMID**
**& CHEMICAL CORPORATION**
*(A Unit of American Cyanamid Company)*
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

MANUFACTURERS OF
SULPHONATED OILS • PENETRANTS • FINISHES • SOFTENERS
SIZING COMPOUNDS • DECERESOL* WETTING AGENTS
AND OTHER SPECIALTIES FOR THE TEXTILE INDUSTRY
*Reg. U. S. Pat. Off.

# *COLOR...

TIDE WATER LUBRICANIA

**DEFINITION:** For practical purposes, the color of an oil is expressed as a "number" which is determined by matching the light transmitted through a pre-determined depth of oil with that same light transmitted through numbered and standardized glasses or disks.

**EXPLANATION** OF TESTS USED: The American Society for Testing Materials have selected two instruments for determining the color of petroleum products. These instruments are:

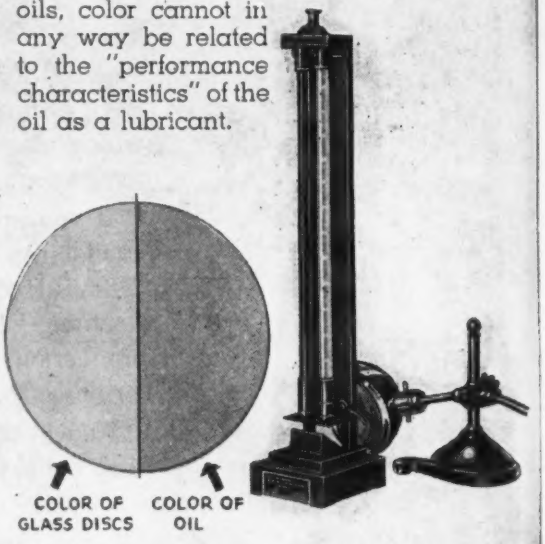
(1) **The Saybolt Chromometer** for making color determinations on the lighter oils.
(2) **The Union Colorimeter** for determining color on the "pale-straw" and darker products.

**THE SAYBOLT CHROMOMETER** consists of two vertical glass tubes. One of these tubes is of plain glass, open at both ends with provision for holding one or two colored glasses or disks at the lower end. The other tube is closed at the lower end with a colorless plate and is provided with a drain cock. This tube is graduated. A mirror reflects light through the oil and the tubes into an optical prism-eye piece for matching the light passing through the oil with the light passing through the disks. The color scale for light oils varies from minus 16 to plus 30.

**THE UNION COLORIMETER:** In the Union Colorimeter the N. P. A. or A. S. T. M. color of the oil is obtained by matching one of a series of fixed color standards against a sample of oil. The comparison is observed through a circular aperture at the end of a long rectangular box. The color standards are mounted at one end of the box in a vertical magazine which may be moved up and down by means of a knurled hand knob operating a ratchet and gear.

The method used for matching colors on both the Saybolt Chromometer and the Union Colorimeter follow a carefully prescribed procedure outlined under A. S. T. M. Designations D156-38 and D155-39T respectively.

**SIGNIFICANCE:** Color is of importance in the case of certain light petroleum fractions, particularly products used in dry cleaning or in the textile industry, where the use of colored products might discolor the fabric being treated. The chief significance of color as applied to the darker oils is in the fact that it is a generally accepted index of the uniformity of a given grade or brand. In these oils, color cannot in any way be related to the "performance characteristics" of the oil as a lubricant.




INDUSTRIAL TYCOL OILS-GREASES

**DRUMS! DRUMS! DRUMS!**
**War needs make it extremely important that all empty drums be returned immediately.**

**SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE** **TYCOL**

* This is the 8th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

All Tycol oils and greases are subject to rigid tests to control the uniform quality of manufacturing. They are manufactured in a comprehensive line so as to meet every specific operating requirement. It is the combination of the unvarying high quality of Tycol products and the scope of the line that makes possible the unexcelled performance of Tycol lubricants for Industry.

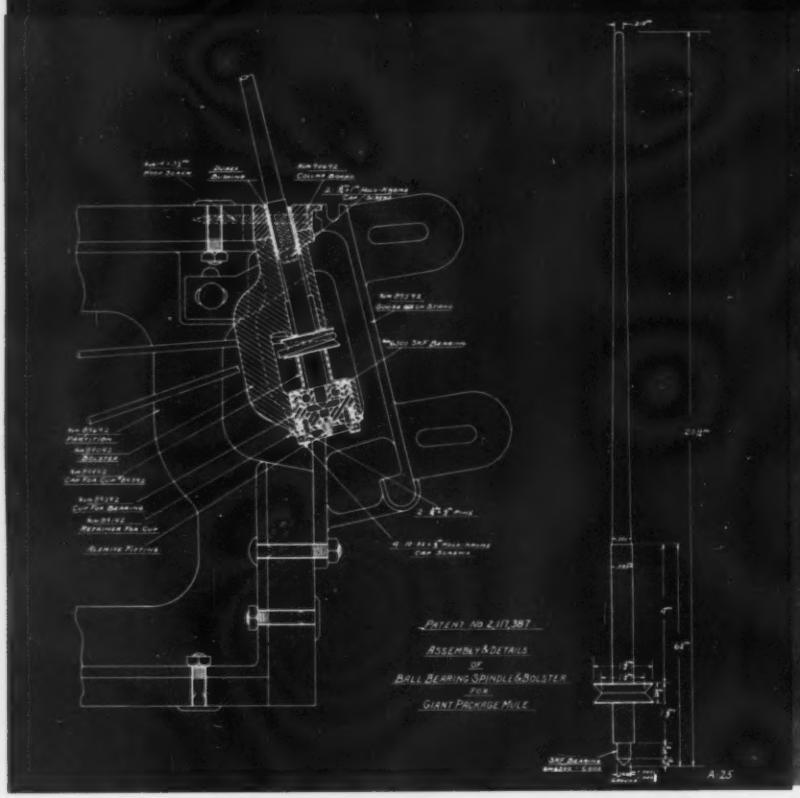
**TIDE WATER ASSOCIATED OIL COMPANY**

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL • Eastern Division: 17 Battery Place, New York 4, N. Y.

*Principal Branch Offices:* Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

# INDUSTRIAL LUBRICANTS

# JOHNSON & BASSETT



## PATENTED SPINDLE ASSEMBLY PREVENTS STICKING; PROMOTES UNIFORM SPINDLE SPEEDS, HENCE MORE EVEN YARN

One of the distinctive features of J & B Mules is the patented spindle assembly which is illustrated herewith. The drawing is for the J & B GIANT Package Mule but the same general design is used for other J & B Mules.

Each J & B spindle is mounted as a unit in a bolster attached to a metal collar board. The collar board bearing is of "Durex" and the lower bearing is of the ball type.

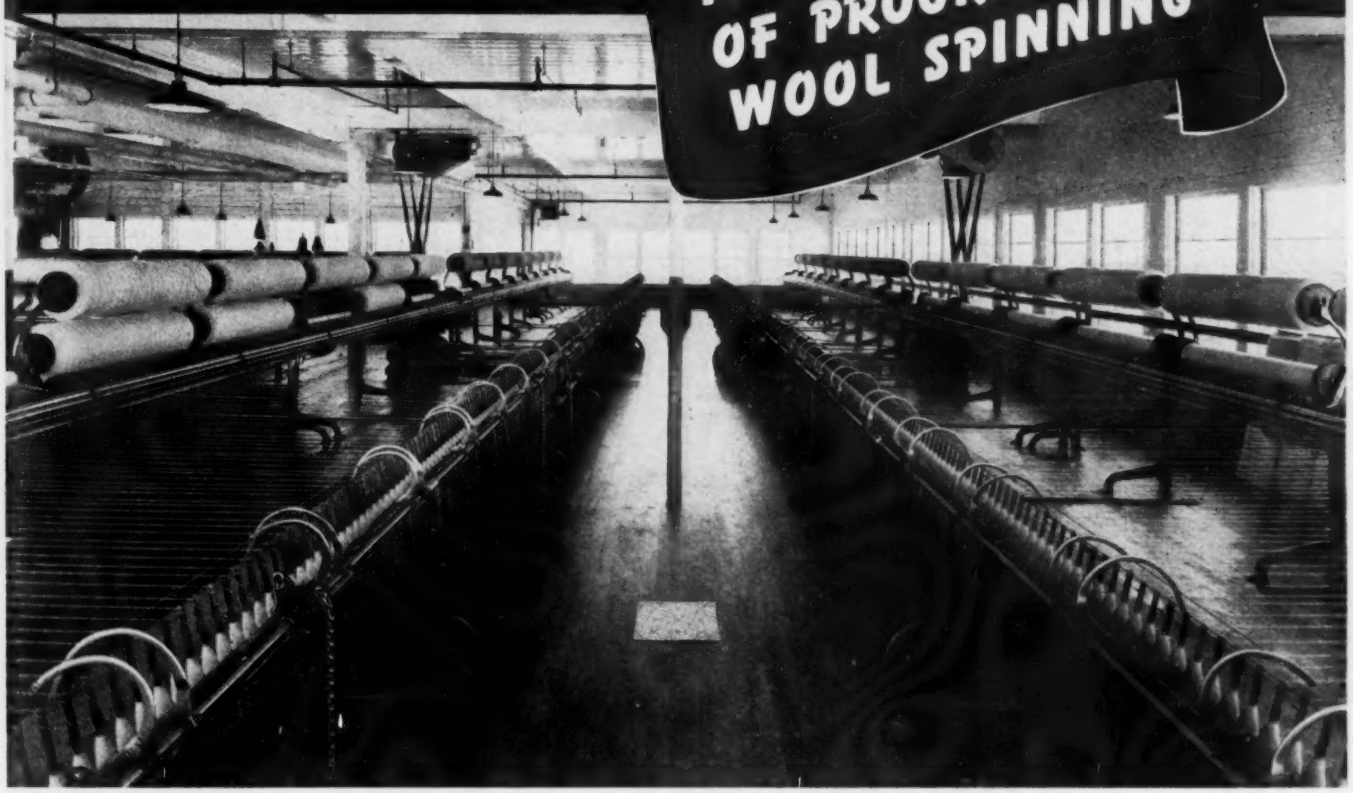
The unit support of the lower bearing allows the spindle to adjust itself to eccentric loads such as are met in spinning and prevents vibration. Elimination of the old step rail means that spindle bearings are permanently aligned, and trouble from sticking is entirely eliminated. Spindles are free running; consequently the speed variation between spindles is surprisingly small, making possible a more even yarn. Tests show that yarn spun on these spindles varies in size less than 5% in 50 yards.

This spindle design has made it possible for the J & B GIANT Package Mule, carrying a 13½" bobbin, to operate at the same high spindle speed as a small package J & B Mule.

**JOHNSON & BASSETT, Inc.**

# MULES

## THE EPITOME OF PROGRESS IN WOOL SPINNING



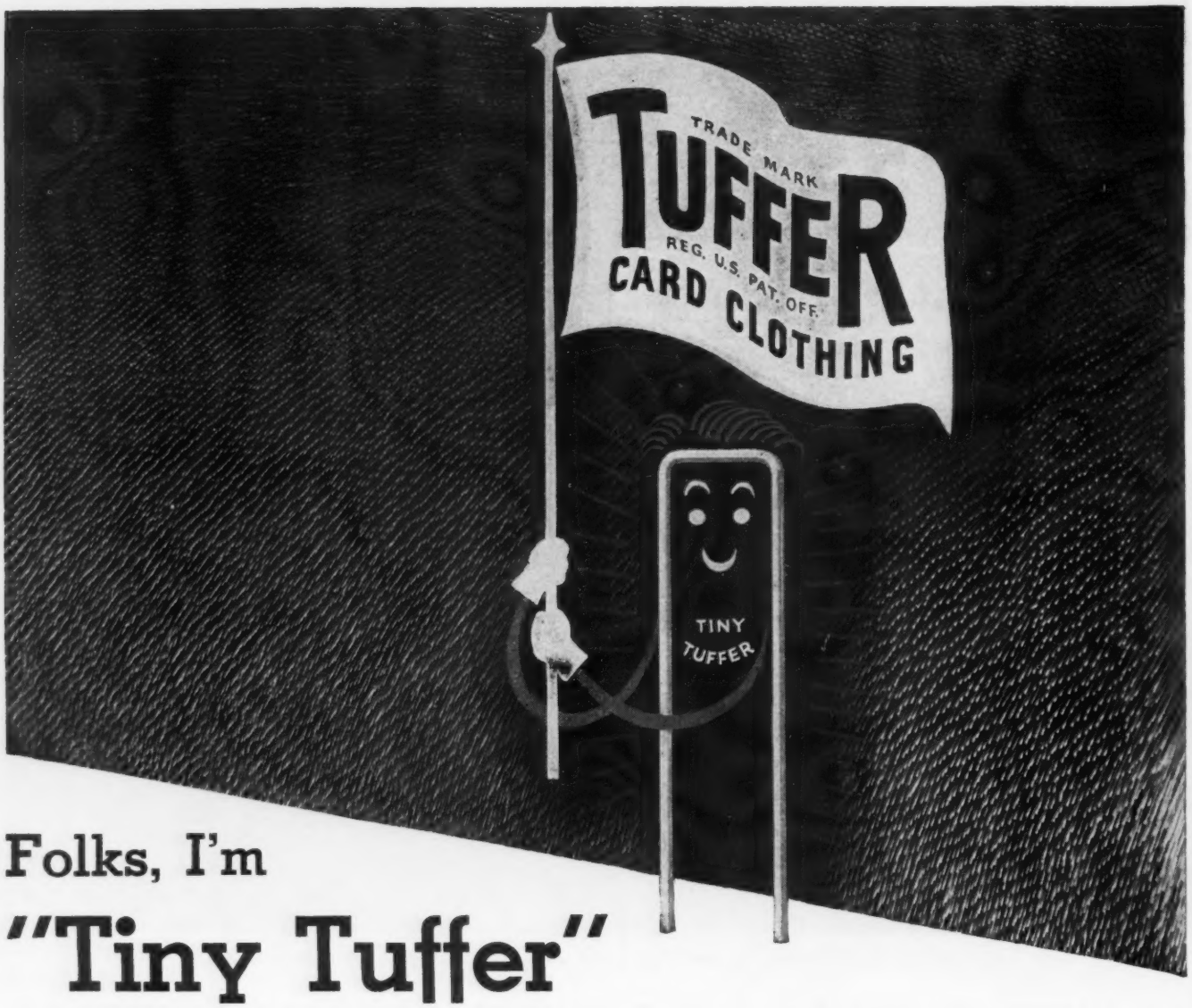
Two 384 Spindle Extra Heavy Pattern High Speed Mules—2¼" Gauge, Small Package Design

## 12 WAYS IN WHICH J & B MULES PAY YOU DIVIDENDS

1. The J & B Mule produces a true woolen yarn,—superior in strength, elasticity, loftiness, roundness and uniformity of size and twist to that produced by frame spinning.
2. It permits inspection of the thread.
3. It will handle a much coarser roving than a frame, thereby increasing production at the card by 15 to 20%.
4. It will successfully spin short staple roving which will not hold together on a frame.
5. It requires less horse power than a frame.
6. Spindle for spindle, it will produce as much yarn as a frame, due to a practical operating speed and negligible breakage.
7. The cost of the yarn produced is at least ½ that of yarn produced on a frame.
8. Its initial cost is several times less than that of a frame.
9. Its cost of upkeep is exceptionally low.
10. The J & B filling package does not require rewinding for the automatic bobbin.
11. Changes for spinning different types of yarn on the J & B Mule are easily and quickly made.
12. Mule bobbins cost less than frame bobbins.

*Descriptive circular on request*

**Worcester, Massachusetts, U.S.A.**




# Folks, I'm "Tiny Tuffer"

## . . . spokesman for TUFFERIZED Card Clothing

**My story means money in your pocket, higher production, more uniform carding, and a finer finish to your yarns.**

Here's why. Our flat, square crowns snuggle firmly into the foundation when clothed correctly and our sides remain parallel at all times. Our points stay sharp longer because they keep in position and avoid injury in stripping. Consequently less frequent grinding is required.

All of which means, to get the most for your money *standardize on TUFFER products.*

### TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

TUFFER CARD CLOTHING

# HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

**Southern Plants:** Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

# I ALSO DRILL TEETH

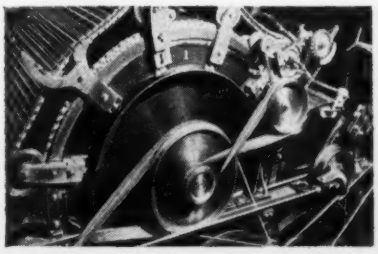
A ridiculous thought, isn't it? Sure, a compressed-air, high-powered drill can rip up a concrete street in jig time . . . but, when you have a cavity in a tooth, then you want the fine, delicate touch of the Dentist's little drill. Yes sir . . . it takes a specialist to do the job right.

## Gilmer SPECIALIZES IN BELTS

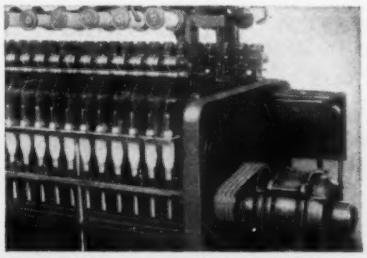
Gilmer has a complete line of belts for the Textile Industry, engineered by specialists . . . the right belt for every power transmission job. And the Gilmer Engineering Staff specializes in power transmission problems. They are available for consultation without obligation. They can show you how to increase the efficiency of most of the drives in your plant by using dependable, tight-gripping, slip-free Gilmers.

## SOME SPECIAL GILMER BELTS:

**GILMER KABLE KORD LICKERIN BELTS:**
Increase production and outlast any belt on the market.



**GILMER V-BELTS:**
Deliver power from the motor to spinning frames with maximum efficiency.



**GILMER CONE-DRIVE BELTS:**
Longer life in the toughest service and shift easily because of sturdy internal construction.

In addition, Gilmer has a complete line of Endless Round Belts for Carding Machines, Endless Cord Spinner Belts for Silk Throwing, and many others, all completely described in the handbook "Gilmer Belts for the Textile Industry." This handbook simplifies the details for specifying Belts for the great majority of drives. Write for your FREE copy today. It's yours for the asking.

Gilmer BELTS

**L. H. GILMER COMPANY, *Tacony, Philadelphia 35, Pa.***
***The Oldest Firm of Rubber Fabric Belt Specialists***

# DUPONT CONTINUOUS

## *High speed bleaching at lower cost*

- Uniform, high quality bleach in two hours.
- Cuts time of processing.
- Pick-up and delivery from bleach house in same day.
- Saves time, steam and chemicals.

THE SPEED and economy of streamline methods are to be found in the Du Pont Continuous Peroxide Bleaching System. Batch bleaching in stationary equipment has given way to continuous processing—a radical departure from usual bleaching technique.

The design of this equipment and the operation are based upon Du Pont research and cooperative development with leading textile mills.

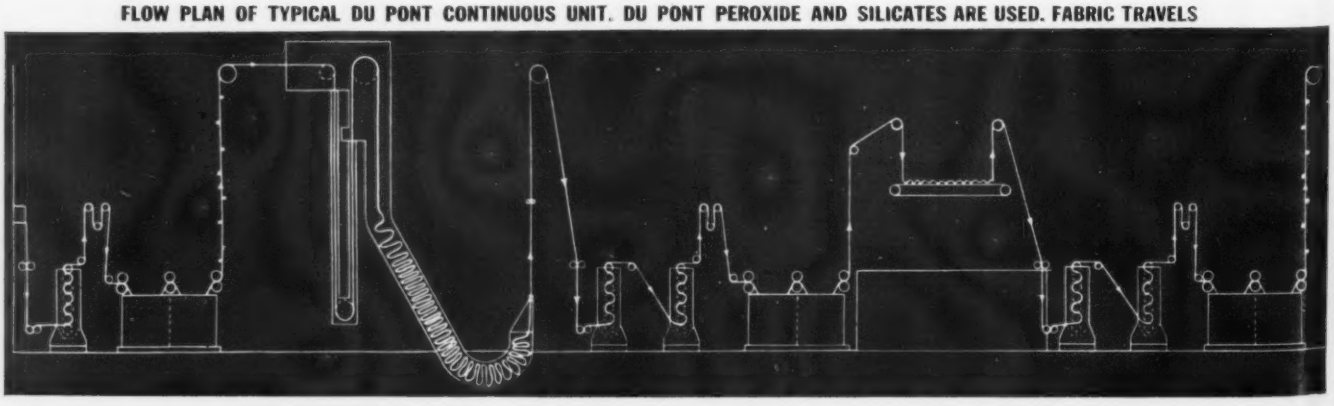
**A FULL BLEACH IN TWO HOURS**—From gray goods to full white takes two hours of processing. Compare this with the usual kier operations requiring 8 to 14 hours of treatment. This greater speed means important economies in large runs, and in small lots when speedy delivery is needed.

**YARD-TO-YARD UNIFORMITY**—Every yard of material gets the same treatment from start to finish. Uniformity of white appearance and absorbency are certain. Kier stains and batch-tc-batch variations are eliminated.

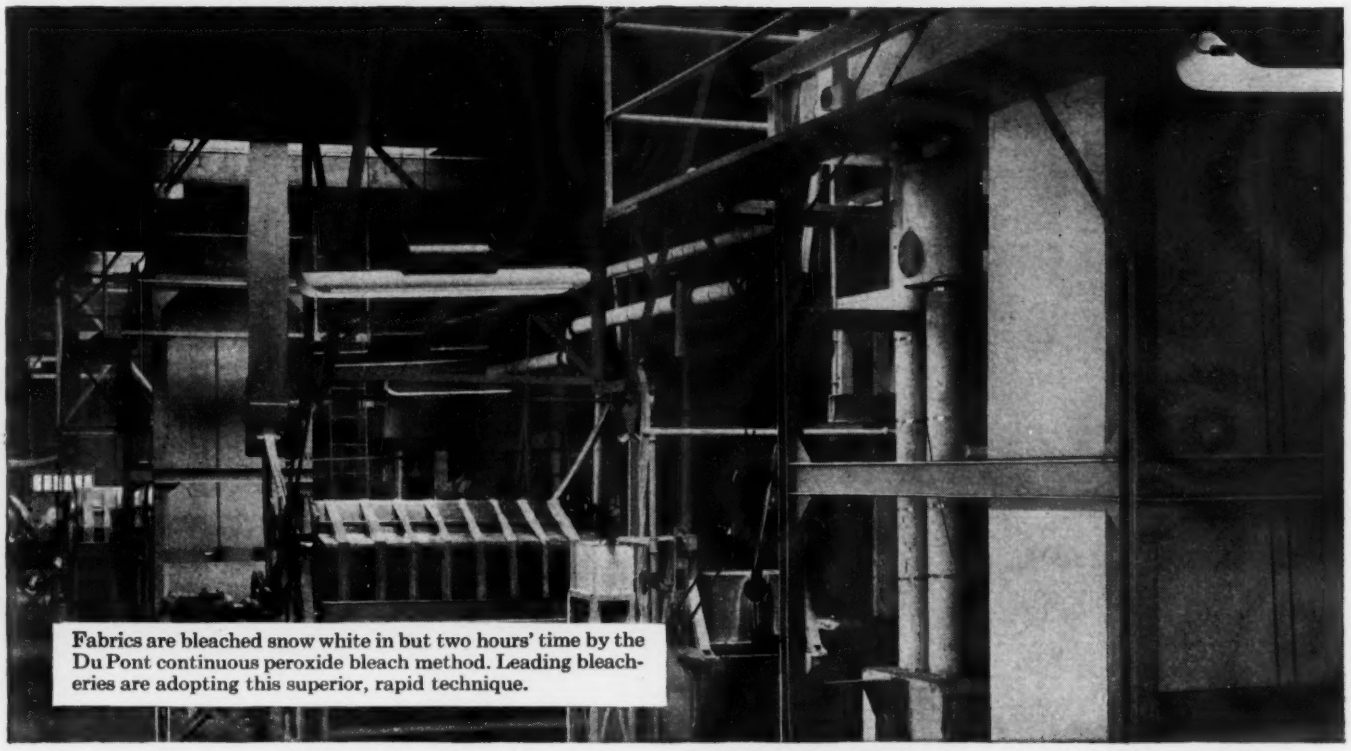
**EASY CONTROL**—Continuous handling permits close control of speed, steam, saturation with caustic and peroxide, temperature and time of bleaching. The operator can maintain constant supervision of all moving parts, which may be controlled from a central panel board. Bleached goods can be inspected promptly and equipment and chemicals adjusted at once for necessary changes.

**CAPACITY OPERATION WITHOUT INTERRUPTION**—The Du Pont process provides a continuous flow of bleached cloth. Time normally lost in loading and unloading kiers is saved for productive use.

**FLOW PLAN OF TYPICAL DU PONT CONTINUOUS UNIT. DU PONT PEROXIDE AND SILICATES ARE USED. FABRIC TRAVELS**



# PEROXIDE BLEACH



Fabrics are bleached snow white in but two hours' time by the Du Pont continuous peroxide bleach method. Leading bleacheries are adopting this superior, rapid technique.

**SAVES STEAM, WATER AND CHEMICALS**

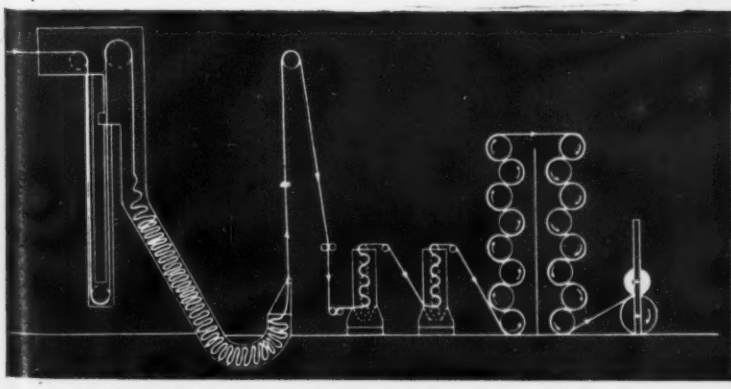
Substantial savings in steam, water and chemicals are obtained when using the Du Pont continuous system. Standard textile chemicals are used. Outstanding features of the process are its efficient operation and low maintenance.

This new continuous process is in full operation in several leading bleacheries in the United States. Equipment based on Du Pont design is built by recognized manufacturers of textile finishing machinery.

For further information and technical service on the use of peroxides in continuous bleaching systems, write us and we will be glad to assist. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington, Del.

This photograph shows a unit in the Du Pont continuous bleach process where the fabric is rapidly saturated with dilute hydrogen peroxide.

**THROUGH THE SYSTEM AT 100 YARDS OR MORE PER MINUTE.**



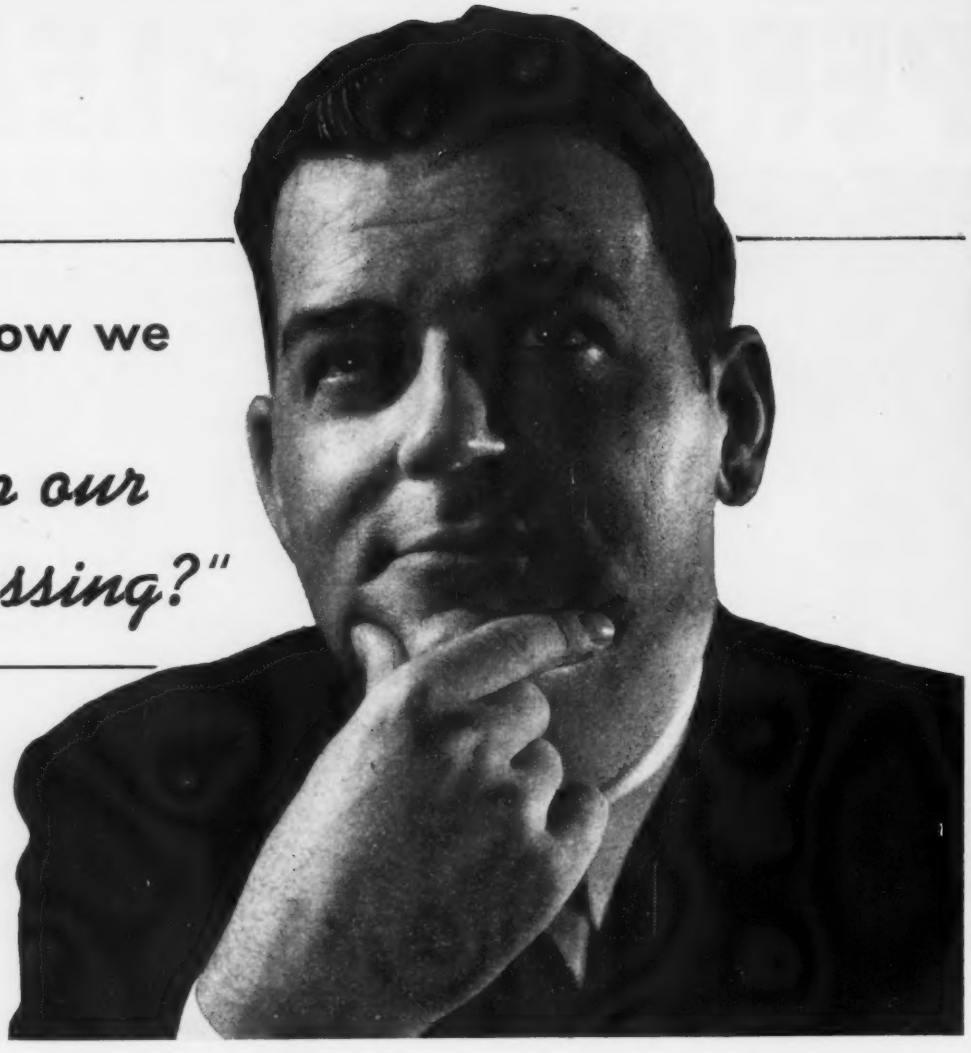
**DU PONT PEROXIDES**

DU PONT

REG. U.S. PAT. OFF.

Better Things for Better Living . . . Through Chemistry

"I wonder how we can *speed up our wet processing?*"



*In* many textile mills some one takes time out now and then to ask that question.

Its answer depends upon whether you need fast wetting out, or detergency, or perhaps a combination of the two.

Houghton supplies products meeting all three demands. For wetting out we offer SURFAX W. O., a soluble oil type of surface active agent having fast wetting speed at low concentrations. Its wetting-back properties appeal in sanforizing. It can be used as an effective emulsifying and dispersing agent for unsaponifiable oils.

For unusual detergent action plus good wetting speed, we offer N-25-C, an effective scouring agent usable at all wet processing temperatures. It has good sudsing properties, and is more effective than soap.

When war-time demands lessen for the critical materials used in making detergents, Houghton will have synthetic scouring agents that will beat the time-honored soaps of yesterday. The Houghton man will arrange for a trial of these materials in your mill, and will inform you of further developments.

**E. F. HOUGHTON & CO.**

303 W. Lehigh Ave., Philadelphia
1301-05 W. Morehead St., Charlotte

*Houghton's* Surface Active Agents

Print the complete address in plain block letters in the panel below, and your return address in the space provided. Use typewriter, dark ink, or pencil. Write plainly. Very small writing is not suitable.

No. _____

PASSED BY THE BASE CENSOR U.S. ARMY

To MRS. JAMES HARRISON
1830 MAIN ST.
WATERTOWN,
NEW HAMPSHIRE, U.S.A

From PVT. JAMES HARRISON
(Serviceman's name)
APO. 1083 % POSTMASTER
(Serviceman's address)
NEW YORK, N.Y.
2/15/44
(Date)

Dear Mary:
Just a note to let you know I am safe and well. I can't tell you how much I miss you darling— and what your letters mean to me here. Am having my next war bond sent to Junior in his name and yours. Can't buy as many as I'd like to on what's left out of the old army pay each month, but between us we'll do our share. Love to all and an extra portion for yourself. Jim

V ···– MAIL

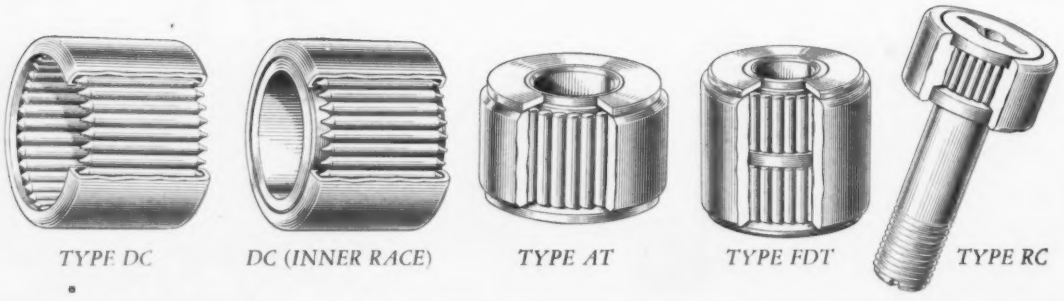
POST OFFICE DEPT. FORM NO. 18

**ARE YOU DOING YOUR SHARE? LET'S ALL BACK THE ATTACK**

**THE TORRINGTON COMPANY**

*Makers of Torrington Spring Beard and Latch Needles*

# *These Needle Bearings ALL Have High Unit Capacity!*



*TYPE DC* *DC (INNER RACE)* *TYPE AT* *TYPE FDT* *TYPE RC*

**HIGH LOAD RATING IN PROPORTION TO SIZE AND WEIGHT IS IMPORTANT DESIGN FEATURE**

As new applications have developed requiring a small size, lightweight, high capacity, anti-friction bearing, modifications have been made in the original Torrington Needle Bearing design until today a full line with a wide range of types and sizes is available.

All of these Needle Bearings offer the outstanding advantage of high unit capacity.

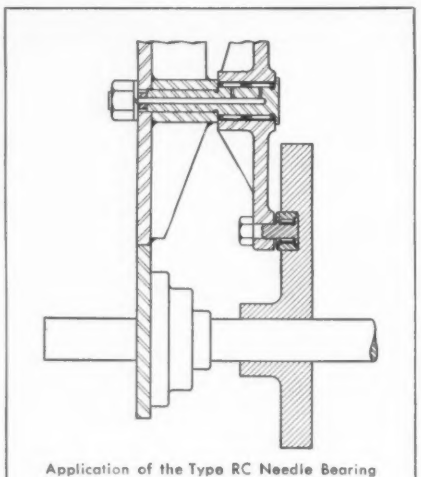
Their high radial load-carrying capacity is due to their basic design principle: A full complement of small diameter needle rollers held within a retaining raceway to form a single compact unit. Thus, in small space, more than double the "line contact" is provided than in other radial roller bearing types.

Weight distribution within the bearing's "load zone" is spread over a larger "area" and danger of stress concentration on races or rollers is consequently reduced.

## "Heavy Duty" Types

Many of the newer types of Torrington Needle Bearings have been designed to utilize the full non-Brinell capacity available. For example, the FT Type is provided with a permanently attached inner race, hardened to a depth to carry the rated load of the bearing. The outer race is heavier and designed to serve without an auxiliary housing if desired

Similarly, other RC Types for use primarily in the application of Needle Bearings as cam followers, have a heavy outer raceway and are designed for heavy rolling loads. Maximum static non-Brinell capacities extend from 1,410 to 133,600 pounds which provide the design engineer with a wide range in bearing selection. The Torrington Engineering Department should be consulted for capacity under rolling loads. Additional information will be found in our Catalog No. 116, available on request.



Application of the Type RC Needle Bearing in cam follower service and two DC Needle Bearings on rocker shaft are shown in this cross-section of a package sealing machine.

## A Unique Combination of Advantages

All types of Torrington Needle Bearings offer the same outstanding advantages which gave the original unit such immediate and widespread acceptance. In addition to high capacity, they are small in size, light in weight. Their unit construction adapts them to mass production methods of assembly. They are easily and efficiently lubricated. And they are low in cost.

All these features are important in planning designs for today's needs and for "Tomorrow's" demands when reduced size, weight and cost will be important factors in contributing to increased production, distribution *and* operating efficiency. Our engineering staff will gladly work with you in selecting the Needle Bearing and in laying out applications.

**THE TORRINGTON COMPANY**

*Established 1866* • Torrington, Conn. • South Bend 21, Ind.

*"Makers of Needle Bearings and Needle Bearing Rollers"*

New York Boston Philadelphia
Detroit Cleveland Seattle
San Francisco Chicago Los Angeles
Toronto London, England

LET'S GO U.S.A. KEEP 'EM FLYING!

# TORRINGTON
## NEEDLE BEARINGS

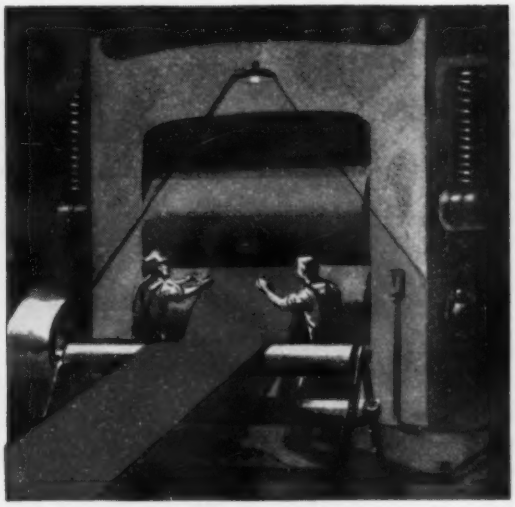
# MANHATTAN FLEXLASTICS*

# *Bring Tomorrow One Day Nearer*

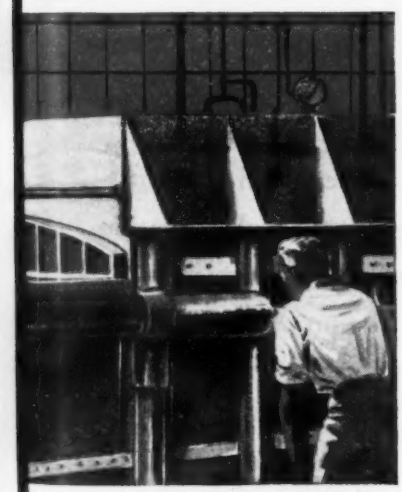
## for users of Industrial Rubber

*manufacture is a blending of art and . At MANHATTAN, it begins with a utomatic mixer blending the right ingredi- correct proportions to assure ultimate LASTICS.**

*Great rolls "plasticize" the mixture to give it uniformity and homogeneity. Skill and experience must join hands with formulae, equipment and engineering to deliver the lasting service of FLEXLASTICS.**



*Great calendars bond FLEXLASTICS* intimately to the built-in strength members at MANHATTAN. These may be of fabric or specially twisted cord or metal, or combinations of these.*



*izing FLEXLASTICS* to give lasting calls for close controls, skill and a long und of experience. Different techniques equired for different FLEXLASTICS.*

THE use of "manufactured" rubbers—commonly termed as synthetic rubber—is by no means a temporary expedient.

The special-purpose synthetic rubbers—as used in MANHATTAN Paranite-G.O.P. products—have become well established in many applications where they render superior service to natural rubber.

They are the fruit of long experience and of the same pioneering policy which made MANHATTAN the first American rubber manufacturer to initiate a continuous program of research in the industrial applications for the special-purpose synthetic rubbers then available.

To this long experience in the art of compounding and processing all available types of rubber was added the knowledge of how to make and where to place *built-in strength members*—acquired by engineering research and protracted service tests. . . . This was an additional ingredient to the 250-odd from which more than 1,000 different MANHATTAN compoundings derived increased strength, greater flexibility, cohesion and elasticity—to such a degree that it justified the coinage of a new term—FLEXLASTICS.*

The word "engineered"—long used by MANHATTAN—is well supplemented by this term "FLEXLASTICS*" so descriptive of the qualities essential in rubber products that have to deliver service under war strain.

FLEXLASTICS* is the assurance that the "engineered" characteristics are in every MANHATTAN flat or V-belt; conveyor or elevator belt; air, steam, water or other type hose; or other item regardless of the kind of rubber from which it is now made.

Condor

and Belt
ted Belt
on Belt

s Hose

Hose
Gasoline

t Hose
ose
ose
ose

Chute Lining
Launder Lining
Industrial Brake Blocks and Lining
Molded Rubber Goods

Rubber Lined Tanks
Rubber Covered Rolls

Abrasive Wheels
Bowling Balls

**50 YEARS OF RESEARCH** *For a business to have lived 50 years and grown continuously, is evidence of vitality and vision. The zealous preservation of that vitality and vision to be applied to production, service and research, is the obligation which management at MANHATTAN has inherited from its founders. FLEXLASTICS* are another stage in the discharge of that obligation.*

ARMY (E) NAVY

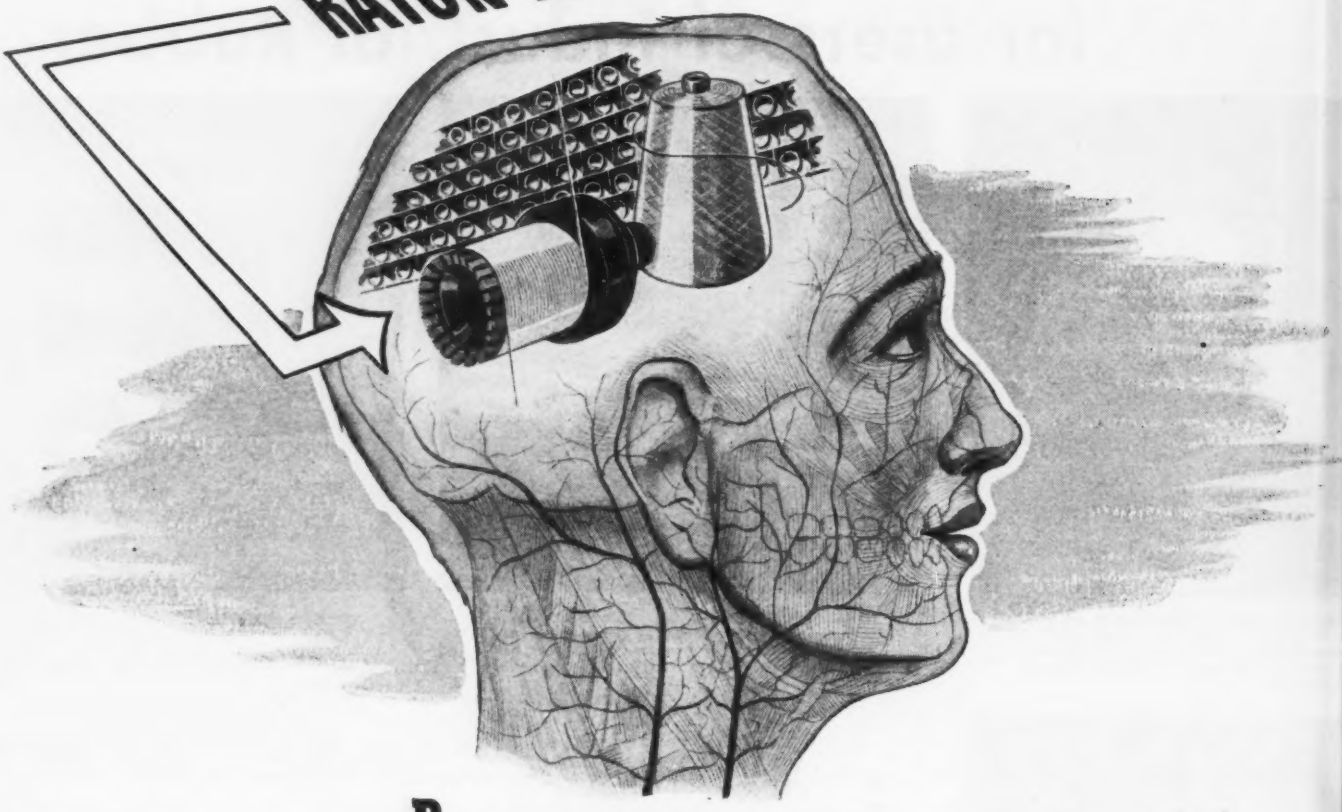
THROW YOUR SCRAP INTO THE SCRAP!

P AHEAD WITH MANHATTAN

*The term FLEXLASTICS is a MANHATTAN trade mark. Only MANHATTAN can make FLEXLASTICS.

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

# RAYON PROGRESS IS BORN HERE



Back of a man's mind, an idea is born. It may be for a carriage to run without horses—or for a message to be delivered without wires—or for rayon yarn to be produced "continuously", going through operation after operation as a single strand. Then come the years of experiment, of heart-breaking trial and error. We of Industrial know the problems our technicians faced, and defeated, in perfecting the "CONTINUOUS PROCESS."

No longer a concept in man's mind, today the "CONTINUOUS PROCESS" is very much a fact—and Industrial's great plants are turning out a yarn continuously, as a single strand. And this yarn is so uniform and knot-free that cloth can be woven from it with an absolute minimum of "down time" thereby increasing mill efficiency and producing a cloth that dyes perfectly and evenly, even in the difficult flat tones.

We're proud that ours is still a Company of youth and vision and energy providing an atmosphere in which new ideas, new ways, new thinking, can blossom into further textile progress.

Industrial
RAYON CORPORATION
MAKERS OF
CONTINUOUS PROCESS* RAYON YARN
AND Spun-lo KNIT UNDERWEAR CLOTH

*Reg. U. S. Pat. Off

CLEVELAND, OHIO · *New York Office, 500 Fifth Ave.*

# The AIR ARM of INDUSTRY

Applying Compressed Air for countless jobs is one of Ingersoll-Rand's major contributions for the industries of war and peace.

Armies of drill runners mining the vital metals, building the strategic roads and air fields, driving the tunnels for highways, railroads and water—all with rock drills powered by Compressed Air.

Thousands of men, women too, building planes, ships, tanks, autos, trucks, locomotives, bridges, machines, and process plants—with drills, grinders, riveting hammers, chippers, hoists—powered by Compressed Air.

Today's war production also emphasizes the use of Compressed Air for propelling torpedoes, scavenging guns, starting Diesels, for painting, for ship salvage, for blasting sirens, for inflation of tires, for blowing blast furnaces and cupolas to increase steel production. . . .

Ingersoll-Rand has pioneered Compressed Air Systems since 1871, ever developing new and time-saving applications.

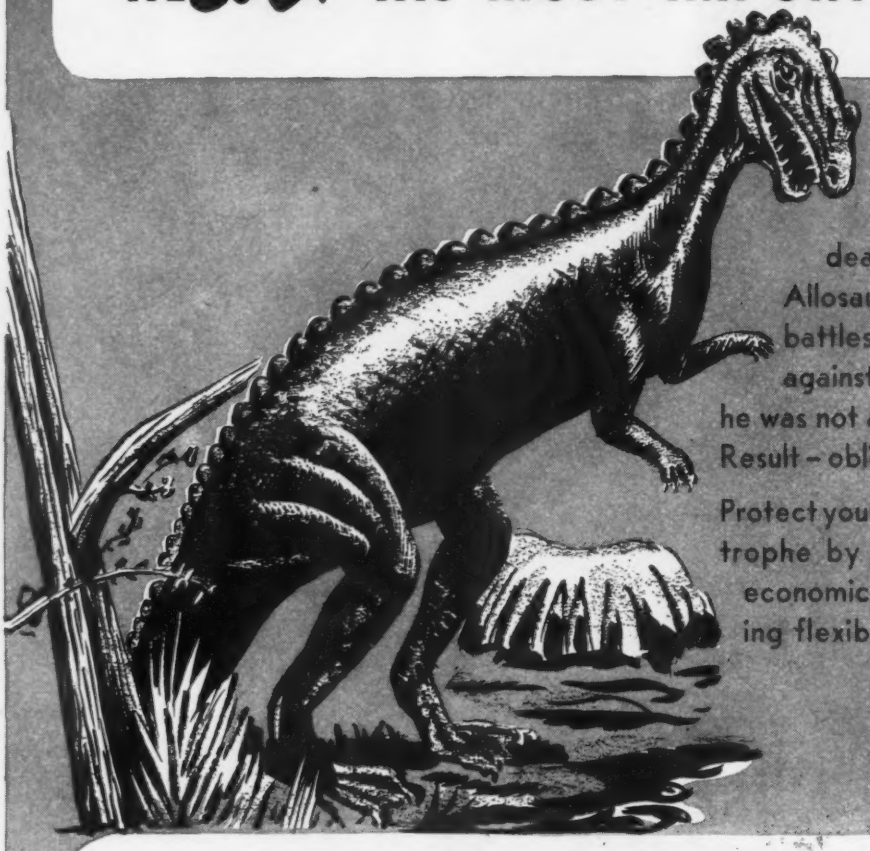
## Ingersoll-Rand

11 Broadway, New York, N. Y.

1-343

COMPRESSORS • TURBO BLOWERS • ROCK DRILLS • AIR TOOLS • OIL AND GAS ENGINES • CONDENSERS • CENTRIFUGAL PUMPS

# HE *LOST* HIS MOST IMPORTANT BATTLE!



Armed with powerful hind legs, terrible teeth and a death-dealing tail, the monstrous Allosaur won countless pre-historic battles. However, he lost the fight against changing conditions because he was not armed with adaptability . . . Result – oblivion!

Protect your business from a similar catastrophe by arming it against changing economic conditions. This means installing flexible equipment, which should include the Foster Model 102 with a –

## 7-WAY FLEXIBILITY

**1** It will wind any kind and any count of staple yarn from fine combed cotton or rayon for tropical fabrics to heavy wool yarns for arctic cloths.

**2** It will wind a straight base cone for warping or a convex base cone for knitting with a simple adjustment.

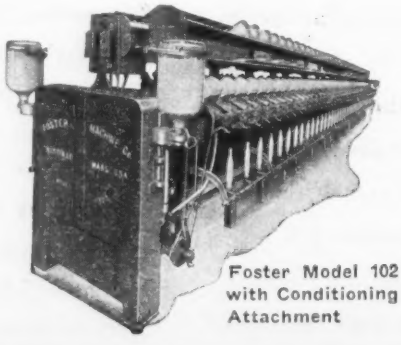
**3** It will produce 9 different angles of wind from 9° to 18°. Important if you radically change your count or type of yarn.

**4** It will wind package dyed yarn, even if damp. No jumping out of guides.

**5** It will wind emulsion treated yarn. In fact, it is frequently equipped with an emulsion attachment.

**6** Changeovers from cones to tubes, or vice versa, are comparatively inexpensive.

**7** One side can wind cones and the other tubes, if desired.



Foster Model 102 with Conditioning Attachment

For today or tomorrow, Foster Model 102 Flexibility is an asset that you need. It also gives you TWICE THE PRODUCTION WITH ONE-THIRD LESS COST as compared with older Models.

These winders are available now to mills able to obtain the required preference rating.

**Foster Machine Co.**
WESTFIELD, MASS.

Southern Office
Johnston Bldg., Charlotte, N. C.

# FOSTER *Model* 102

FOR WINDING COTTON · WOOL · WORSTED · MERINO · MERCERIZED · SPUN SILK AND SPUN RAYON YARNS

# CALCO MILITARY VATS
## —help Uncle Sam pour it on!

Cottons! Twills! Drills! Shirts! Pants! Underwear! Fatigues! Yards by the billion... garments by the million... the textile industry pours it on for Uncle Sam.

Helping out in the dyehouse are those textile standards and favorites —Calcosol Khaki G, Brown G, Brown R, Olive R and Olive Green BN. These vat colors are counted on for level dyeing—for money value—for solving all military requirements on piece goods. And they are also doing a job for rope-dyeing of knit underwear.

Calco Dyes Are Better Buys

**CALCO CHEMICAL DIVISION · AMERICAN CYANAMID COMPANY**

**BOUND BROOK, NEW JERSEY**

**BOSTON · CHICAGO · PROVIDENCE · NEW YORK · CHARLOTTE · PHILADELPHIA**

# RAYON REPORTS

*Published Monthly by American Viscose Corporation, New York, N. Y.* FEBRUARY, 1944


## ACETATE RAYON YARN FOR WIRE INSULATION

Major telephone companies are now using acetate rayon yarn for insulating interior telephone system wires. The change to rayon has been made because the properties required for telephone central-office wire insulation are more adequately met by the man-made fiber, according to telephone engineers. Acetate yarns have high dielectric strength, low moisture absorption, and good aging properties.

The rayon insulation is used today

for switchboard wires, switchboard cable wires and distributing-frame wires...in both local and toll circuits.

### THROWSTERS PRAISE "CAKE" PACKAGING AND "AVCONIT"

The Empire State Yarns Corporation, throwsters and processors for the hosiery and knitting market, recently referred in their advertising to two American Viscose developments—"Cake" packaging and "Avconit" sizing for knitting yarns. In an announcement to the trade, these specialists stated that these two developments made possible added economies and an advanced technique.

Throwing rayon from "Cake" packages, it was pointed out, affords marked savings over throwing from conventional skein or cone-packed viscose yarn. "Avconit" processing, on the other hand, means increased production, uniform results and time saved. The Empire State Yarns Corporation then added that, because "Avconit" produces the best results in full-fashion knitting, they were using it exclusively for full-fashion hosiery thrown yarns.

### MILLS URGED TO HANDLE "CAKES" WITH CARE

In view of the fact that some mills consider the "Cake" package absolutely foolproof, American Viscose suggest careful handling of cakes after they have been received.

Particular attention must be given to the means of holding cakes when unwinding and care should be observed in selecting the apparatus used for this purpose. Furthermore, there should be supervisory attention in the mill to see that cakes are not deformed in handling.

Cakes will only remain profitable so long as they are not troublesome in unwinding and so long as speeds of copping or other winding equipment do not have to be reduced. There are many advantages and economies in using this type of package, and they should not be lost through careless handling.

### NEW RAYON FIBER FOR SPINNING FINER YARNS!

The American Viscose Corporation announces the successful development into commercial application of a new very fine viscose rayon staple fiber of the "Avisco" or extra-strength type. This fiber is of principal and immediate interest to the fine goods cotton system mills and the spun silk or schappe spinners.

The new fiber is described as 1.0 denier "Avisco" and is produced in appropriate standard lengths suitable for the different spinning systems on which it is used. Basically, it is said to permit the spinning of yarns of far finer sizes than heretofore possible with standard type rayon staple fibers. In addition, it materially increases the strength of spun rayon yarns and fabrics as compared with the yarns and fabrics made with standard type viscose rayon staple fibers. Tests have also demonstrated that the new fiber provides superior creping qualities in fabrics made with high-twist spun rayon yarns.

Commercial applications already reported include flat knit fabrics, simplex glove fabrics, tricot knit dress goods, fine broadcloths, foundation fabrics, and various types of sheer handkerchief, dress and shirting materials. These are available in constructions featuring yarns as fine as from 50/1 to 80/1 and 100/2 cotton counts.

The 1.0 denier "Avisco" fiber has been spun experimentally in 100 per cent content yarns as fine as 200/1 and 300/1, or approximately up to 150 miles per pound of yarn.

The price of the new fiber is currently quoted at 26 cents per pound.

For the successful development of the fiber, credit is given to the coordinated efforts of the American Viscose Corporation's production technicians, Textile Research Department and Fabric Development Department. As a result of its availability in commercial quantities, it is predicted that the use of spun rayon in new fields, in new types of fabrics and new products will be considerably broadened.

### STAR ADDED TO MARCUS HOOK'S ARMY-NAVY "E" PENNANT

Employees of the Marcus Hook, Pa., plant of the American Viscose Corporation were recently awarded a star to be placed on their Army-Navy "E" pennant. The star signifies that these men and women have continued their record of fine achievement in the production of war equipment during the six-month period following the banner award.


**MAKE USE OF 4-PLY SERVICE**

**1 PRODUCT RESEARCH**
Helps you get the right yarn.

**2 FABRIC DEVELOPMENT**
Helps you design new fabrics.

**3 TEXTILE RESEARCH**
Helps solve production and finishing problems.

**4 "CROWN"* TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

*Producer of*
CROWN* *Rayon Yarns and Staple Fibers*

*Sales Offices:* 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

*Plants at:* Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

*Reg. U. S. Pat. Off.

# It has to be *Right*

Alone in his "office" in the skies, the navigator makes his observations, consults his tables, plots his position. Just a line—a simple line—marks the course. But *it has to be right* . . . the success of an important mission, the return of a bomber and its crew depend on its accuracy.

Columbia chemicals have to be right, too. Frequently they are used in operations involving the conversion of raw materials. In other cases they may enter into only one phase of a complicated manufacturing process, and pass off when their task is completed. But always they must be of a standard that assures the correct form and quality of the finished product.

This is why Columbia exercises infinite care in supplying chemicals which conform to the precise needs of its customers.

**PITTSBURGH PLATE GLASS COMPANY**
**COLUMBIA CHEMICAL DIVISION**
GRANT BUILDING, PITTSBURGH (19), PENNSYLVANIA

Chicago • • • Boston • • • St. Louis • • • Pittsburgh • • • New York • • • Cincinnati
Cleveland • • • Minneapolis • • • Philadelphia • • • Charlotte

## COLUMBIA SPOTLIGHT

DEEPEST LIMESTONE MINE in the world—2323 feet—was sunk last year by Columbia less than two miles from its plant at Barberton, Ohio. Among its many unique features is semi-automatic hoisting which attains top speed of 2,000 feet per minute.

THE NATION is facing a highly critical situation in domestic freight transportation, the O. D. T. warns in a plea for the cooperation of every shipper. Be sure your shipping and receiving departments understand that the handling of railway equipment with all possible speed is vitally important to our war effort.

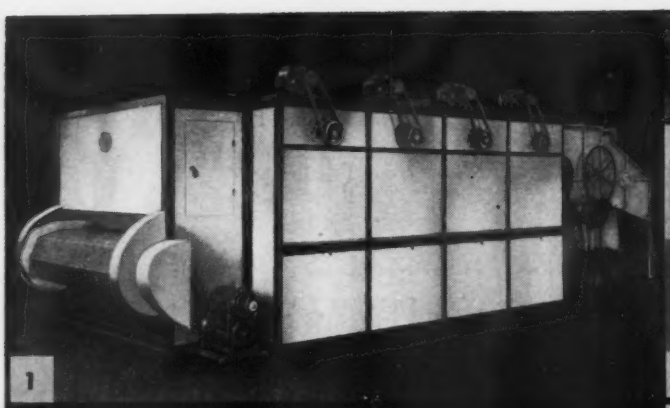
NOW IT CAN BE TOLD.. the largest Chlorine-Caustic Soda plant built as a single unit east of the Rockies—a Defense Plant Corporation project—is being operated by Columbia at Natrium, W. Va.

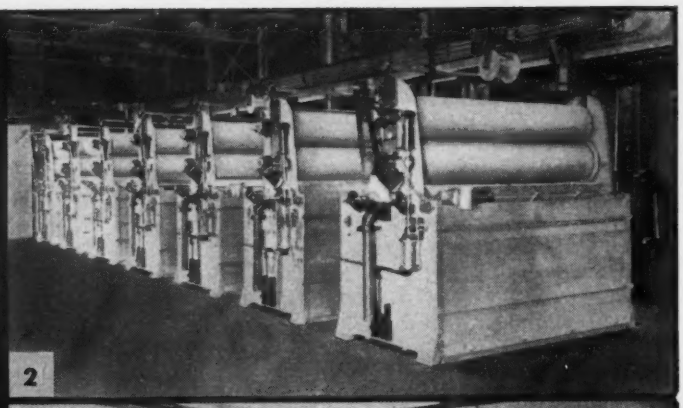
A REVISED EDITION of Columbia's Products Booklet is now ready for distribution. A handy reference of products, grades, package units, uses of all Columbia products. Write for free copies.

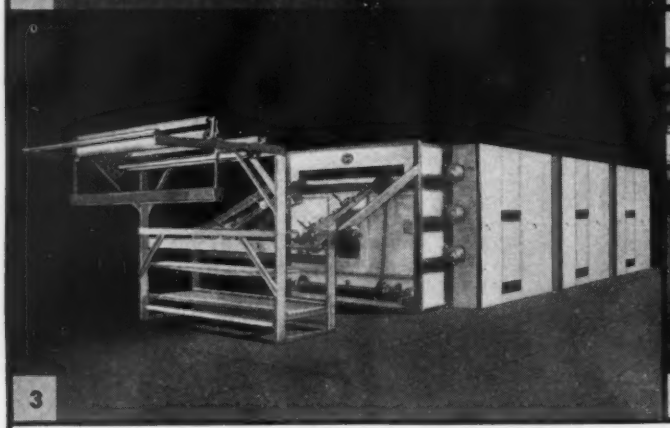
WHEN THE NATION'S rubber production no longer requires all of Columbia's production of SILENE EF, this extraordinary pigment will find its way into an amazing variety of products. To name but a few—paints, tooth powders, deodorant creams, face powders. New uses are being discovered constantly. If you'd like to turn your own laboratories loose on SILENE EF, data and samples are available on request.

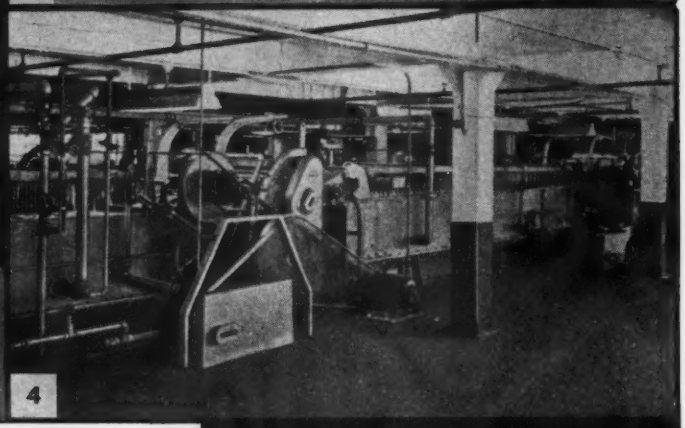
# COLUMBIA CHEMICALS

Soda Ash • Caustic Soda • Liquid Chlorine • Sodium Bicarbonate • Silene EF (Hydrated Calcium Silicate) • Calcium Chloride
Soda Briquettes • Modified Sodas • Caustic Ash • Calcium Hypochlorite • Phosflake • Calcene (Precipitated Calcium Carbonate)

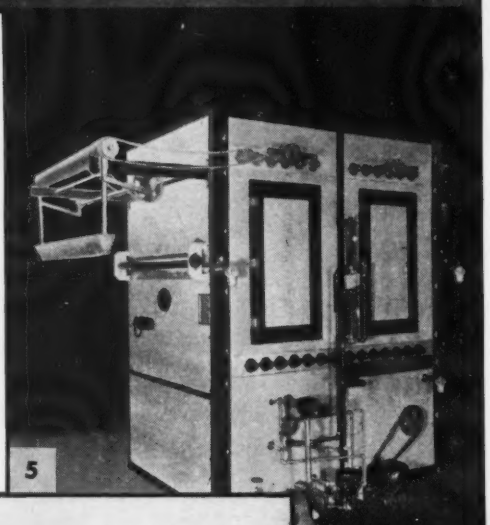


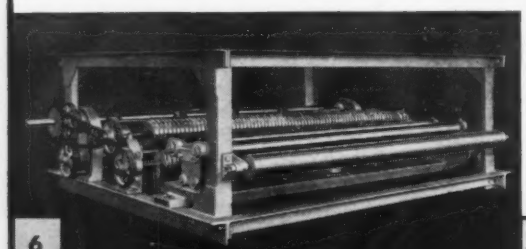




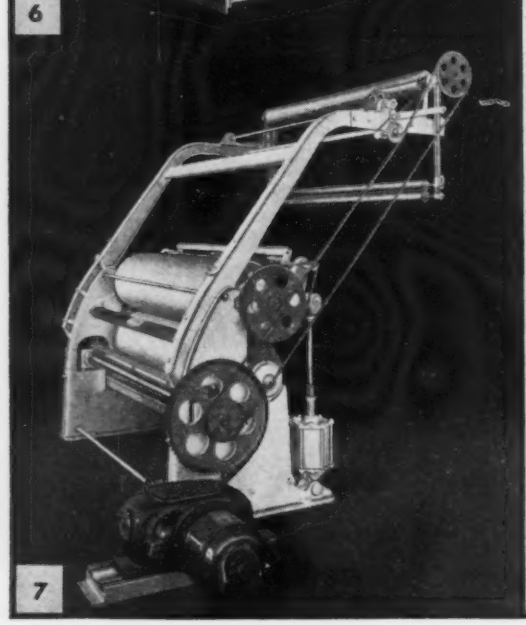


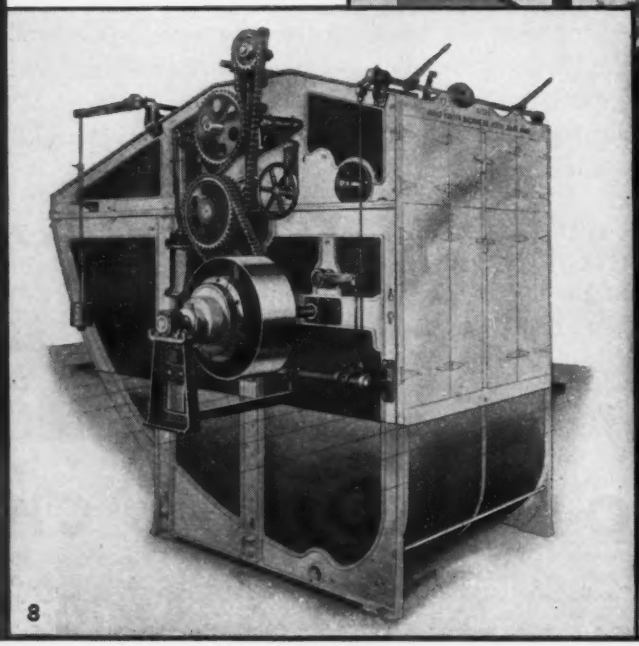
(1) Uniflow stock dryer with rotary feed. (2) Continuous cloth washer. (3) Uniflow tenter dryer. (4) Model "G" wool scouring train. (5) Cloth conditioner. (6) Ceiling scutcher. (7) Model "G" hydraulic squeeze rolls. (8) No. 26 fulling mill. (9) Cloth carbonizer.





JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS





# HUNTER

*Specialists in the Design & Construction of*

**WOOLEN AND WORSTED PREPARATION AND WET FINISHING MACHINERY**

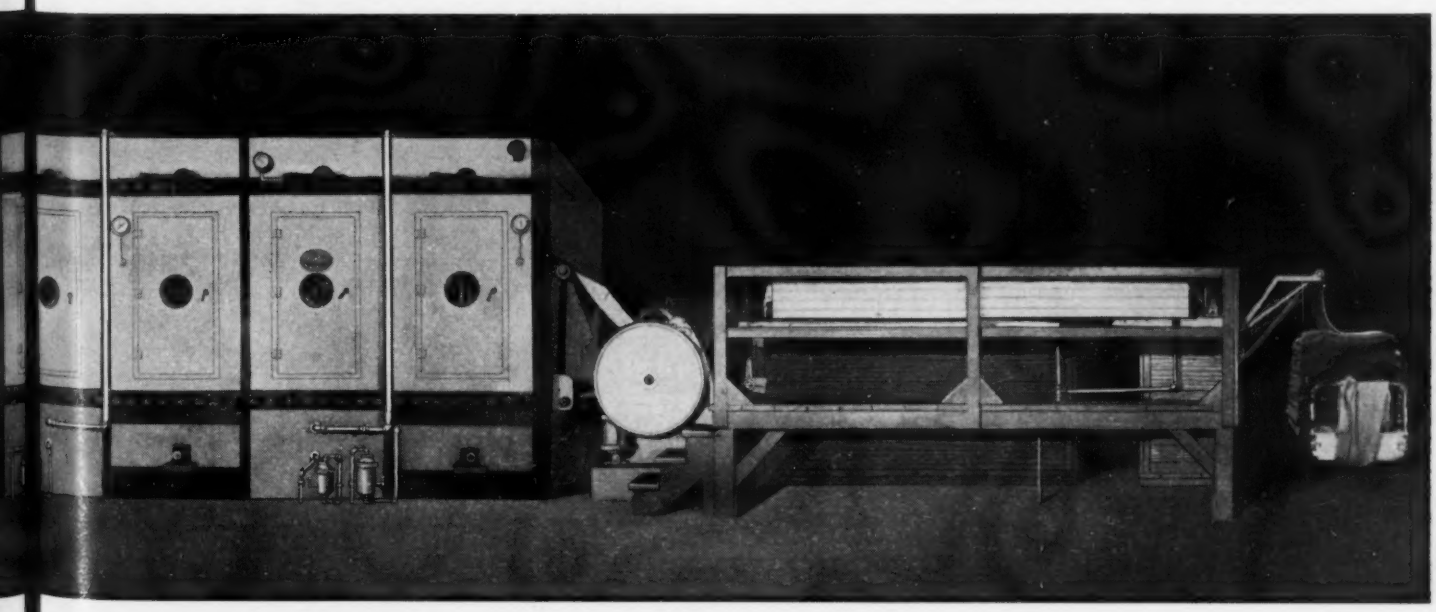
Every machine in the Hunter line is backed by years of experience in the textile industry. And every machine has been tested and proven in the field so that our specifications will meet your exact requirements, and give a guaranteed, predetermined production and result.

Hunter methods and machines are backed with engineering and field service which keeps you up-to-date on the latest ways of keeping production, quality and profits at their peak. There is never any obligation in calling on these men for service.

New catalogs, packed with engineering and production data, are continually being prepared. Be sure to put your name on our mailing list—just write Hunter on your own letterhead.

**JAMES HUNTER MACHINE COMPANY**

**FOUNDED 1847** **NORTH ADAMS, MASS., U.S.A.**



Pioneering
WITH Pigments
-one of a series of developments illustrating the advantages of Aridye* pigmented colors in new and significant applications

# WHY CAMOUFLAGE STRIPS ARE *Pigment-Dyed*

Camouflage strips, which are made of burlap and osnaburg, must be finished and dyed to meet government specifications covering penetration, weather-fastness, mildew resistance, gloss, imprint, solubility, spontaneous combustion and infra-red reflectance.

Because of the infra-red reflectance, weather-fastness, and the difficulties of handling burlap, these specifications present unusual problems. Most conventional dyestuffs have low reflectance of infra-red rays, and their presence would be detected by the enemy through the use of infra-red photography. Camouflage strips pigment-dyed with selected pigments, however, elude detection by infra-red photography even though they are made of burlap. And they meet the most stringent weather-fastness requirements!

Camouflage strips, therefore, call for pigments — and finishers have chosen Aridye* camouflage colors to finish more than 50 million yards of this type of fabric.

Whenever fastness requirements are very rigid — when extreme lightfastness and washfastness are wanted, think of pigments. Then weigh the ease of application and the decision is likely to be in favor of pigments rather than conventional dyestuffs.

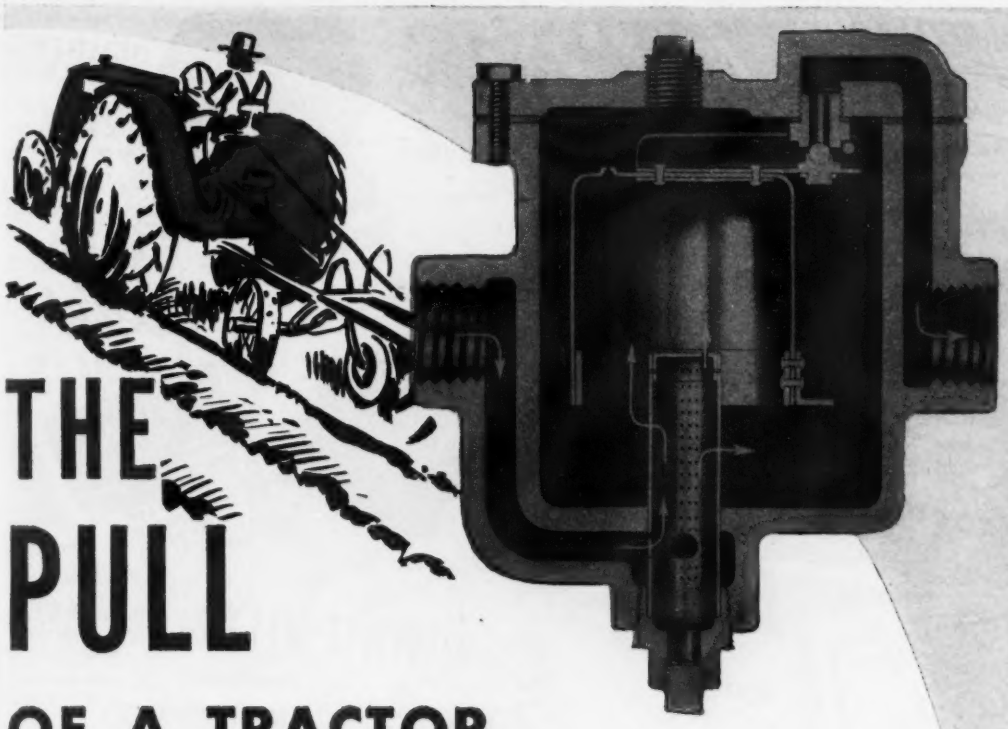
After the war, you will face new dyeing problems. Be ready to consider pigments as a possible solution. For complete information about pigment colors, or for technical assistance in their application, consult the pioneers in pigment experience and research — write to Aridye Corporation, a subsidiary of Interchemical Corporation, Fair Lawn, New Jersey.

*An illustrated, detailed folder has been prepared on the dyeing of camouflage strips with Aridye pigment colors, and will be sent without obligation to all finishing plants requesting it. Send for your copy today.*

*Reg. U. S. Pat. Off.

**Aridye** TEXTILE COLORING MATERIALS

ARIDYE CORPORATION • SUBSIDIARY OF INTERCHEMICAL CORPORATION • FAIR LAWN, N. J. • ROCK HILL, S. C. • PROVIDENCE, R. I.



# THE PULL OF A TRACTOR

*with*

## The Sarco BUCKET STEAM TRAP

*for*

**STEAM MAINS**

**PROCESS STEAM LINES**

**KETTLES AND PANS**

**TANKS**

**DRYERS**

**PRESSES**

**EVAPORATORS**

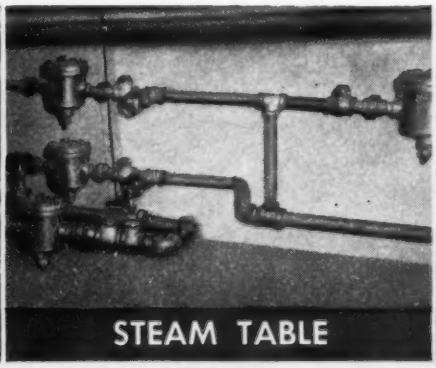
For sheer capacity, the Sarco Bucket Trap can outhaul any other type in terms of condensate delivered. It will take the toughest load of a laundry or platen press in its stride. On busy supply lines to engines, turbines, pumps, and refinery equipment, it removes all condensation as fast as formed, assuring dry steam to the equipment.

***Five outstanding advantages:***

1. Straight-through connection saves piping.
2. Cleaned without disconnecting.
3. Strainer is included inside the trap — saving the cost of separate strainer installation.
4. Can be equipped with thermostatic air by-pass.
5. Made in three standard ranges up to 250 lbs., and in special types of forged steel up to 900 lbs.

Ask for Catalog No. 350.

STORAGE TANK



STEAM TABLE

PLATEN PRESS

**SARCO COMPANY, INC.**
**475 FIFTH AVENUE**
**NEW YORK 17, N. Y.**
REPRESENTED IN PRINCIPAL CITIES

# SARCO Saves Steam

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# NO SQUARE PEGS For Sale

**General Electronics Industries Specializes in Specific Applications of Electronics to Solve Individual Production Problems**

● For assistance in your postwar production planning, you are invited to call upon the research engineering skill, experience and facilities of one of the largest organizations specializing in electronics.

General Electronics Industries is prepared at this time to study your electronics requirements and to design or develop the application that will fit your individual purpose. Thus, you will gain a head start in your future postwar production, with the perfect electronic devices General Electronics Industries will be ready to supply as soon as its manufacturing facilities are no longer engaged in all-out war effort.

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TRADE-MARK REG. U.S. PAT. OFF.

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# PERKINS AUTOMATIC BIN PILERS

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*You cannot afford to pile by hand*

B. F. PERKINS & SON, INC.

*ENGINEERS AND MANUFACTURERS*

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WHAT TEXTILE MILL MEN WANT TO KNOW Today
Textile World Field Staff Reports to Manufacturers of Equipment and Supplies on the Current Problems of their Customers and Prospects
Bulletin No. 4 Published by TEXTILE WORLD, 330 West 42nd Street, New York 18, N.Y. November, 1943
EXPECTS USE OF LIGHTER METALS IN TEXTILE MACHINERY WILL IMPROVE PERFORMANCE - CUT OPERATING COSTS
From the General Manager of a Cotton Mill
MACHINERY COMPANY BULLETINS BIG HELP IN MAKING REPAIRS
Says Woolen Mill Superintendent
PURPOSE OF THIS BULL
"Lighter Materials Ought to Reduce Materially the Electric Power Factor in Driving Machines"

**AMONG the light but strong materials, to which this mill general manager looks for increased economy after the war, few are lighter than Formica (Specific gravity 1:35 or about half the weight of Aluminum).**

**Other interesting qualities of Formica: It is non-metallic but also non-porous, and will not absorb or hold stains. It does not shatter and will preserve a smooth surface under wear so that you never need fear that fabrics will be snagged.**

**It stands up to constant friction as in loom-box linings or separator blades.**

**In short it gives you all the advantages of the lightest of metals, plus some chemical and mechanical advantages they do not possess.**

**"The Formica Story" is a moving picture in color showing the qualities of Formica, how it is made, how it is used. Available for meetings of engineers and production men.**

**THE FORMICA INSULATION COMPANY**
**4668 SPRING GROVE AVENUE CINCINNATI 32, OHIO**

ARMY E NAVY

FORMICA

# NO TIME FOR "BROKEN NOSES" NOW!

PHOTO LIBBY-OWENS-FORD

That's a big bomber nose in the corrugated box. It's a mighty important piece of war goods, and its safe delivery stresses the vital role, war-time packaging is playing. Yes, on the unbroken chain of production, packaging and safe arrival depends the welfare of our armed forces.

Techniques developed in the engineering of war-time packages, that carry every type of war supplies to world-wide destinations, are carefully studied by H & D Package Engineers so that every possible packaging improvement will be in readiness for your post-war requirements.

Tomorrow's shipments will profit by today's packaging developments. Now is the time to plan post-war packaging. Rugged, dependable H & D corrugated boxes, designed by the authority on packaging, are the answer to shipshape, undamaged deliveries. Let H & D Package Engineers help you with your plans for post-war packages that protect and promote the product.

*IF YOU CAN'T BUY TWO WAR BONDS PER MONTH—BUY ONE!*

**TELLS HOW TO SPECIFY CORRUGATED BOXES**

Information on shipment size, weight, value, packaging, sealing, handling, and a question chart to easily determine the proper corrugated box to use, are clearly outlined in the H & D "Little Packaging Library" booklet, "How To Specify Corrugated Boxes."

This booklet as well as the 7 others that comprise the H & D "Little Packaging Library" can be had by writing The Hinde & Dauch Paper Company, Executive Offices, 4430 Decatur Street, Sandusky, Ohio.

FACTORIES in Baltimore • Boston • Buffalo Chicago • Cleveland • Detroit • Gloucester, N. J. Hoboken • Kansas City • Lenoir, N. C. • Montreal Richmond • St. Louis • Sandusky, Ohio • Toronto

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*For postwar packaging . . better see* **HINDE & DAUCH**

AUTHORITY ON PACKAGING . . . CORRUGATED SHIPPING BOXES

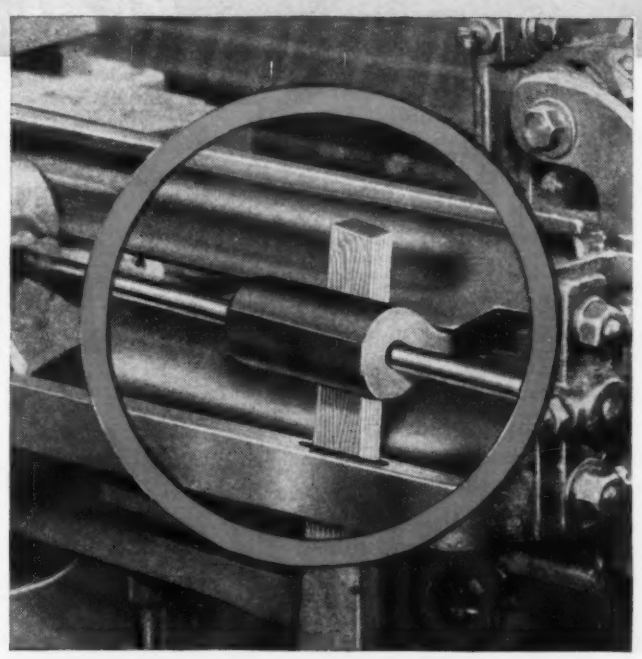
# THIS IS THE PICKER THAT LASTS LONGER and COSTS LESS!

**DAYTON REVERSIBLE DROP-BOX PICKER WITH EXCLUSIVE 3-POINT DENSITY CONSTRUCTION**

**Point No. 1**—*Composition is harder around the spindle rod. Oil-less, self-lubricating resinous bearing will not become egg-shaped in service. Positively will not wear the picker stick.*

**Point No. 2**—*Softer composition at the picker stick contact. Proper cushion to shuttle point.*

**Point No. 3**—*Special composition at shuttle contact eliminates shuttle point loosening. Perfect throw to shuttle throughout life of picker.*



Increased production schedules have served to spotlight the extraordinary efficiency and longer life of the Dayton Reversible Drop-Box Picker. The one piece molded construction of this picker insures the maximum cushion against picker stick, a uniform and correct shuttle contact point and a permanently perfect throw to the shuttle. No pre-aging or dipping is required for this picker that gives the lowest cost per loom hour.

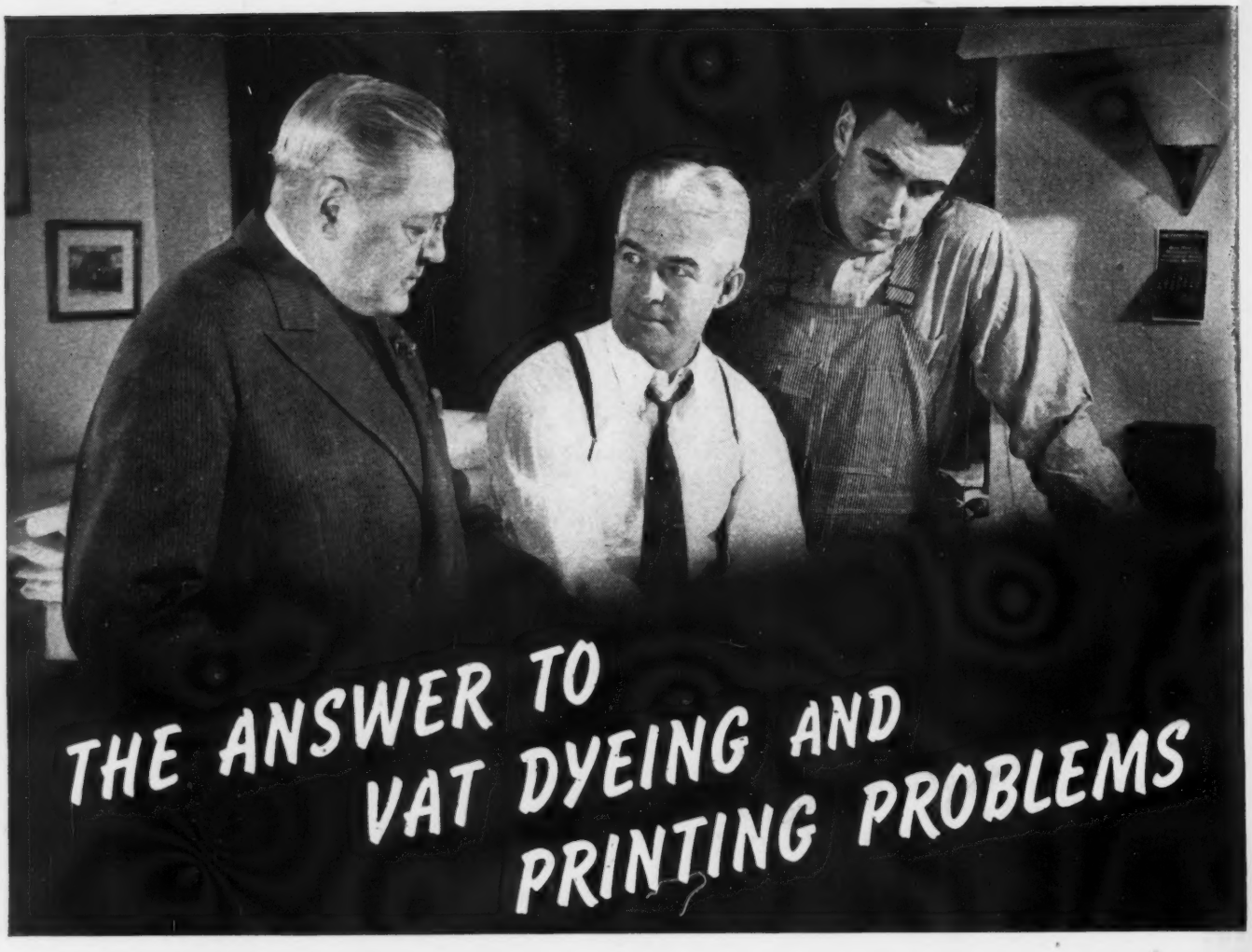
Like all Dayton loom supplies the Dayton Reversible Drop-Box Picker is backed by years of rubber research and experience. It is a good example of the Technical Excellence which the Textile industry expects and gets from Dayton Rubber.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON 1, OHIO • WAYNESVILLE, N. C.
*Main Sales Office:* Woodside Bldg., Greenville, S. C.

LET'S ALL BACK THE ATTACK WITH WAR BONDS

**Pickers by Dayton Rubber**

REG TRADE MARK THE DAYTON RUBBER MFG. CO.




● When Jacques Wolf and Company released APASOL last Spring, it had already achieved an impressive laboratory record as a low-cost, high-efficiency sulphonated oil.

Today, APASOL has been proved through use. Over and over again the verdict is: APASOL provides better penetration . . . more even dyeing . . . brighter colors.

The reason why APASOL assures level dyeing and excellent penetration is that it suspends the dyes in a finely divided form. It is suitable to all types of hard water and solutions of such salts as Lime, Common, Fine and Epsom.

APASOL can be used in pasting dyestuff, wetting out fibre before dyeing and directly in the dyebath. It protects cloth against the action of alkali.

For printing, APASOL is unexcelled. Added directly to the paste, it aids reduction, protects fibres, facilitates aging, increases solubility and brightens colors.

Let APASOL answer *your* dyeing and printing problems!

# APASOL

## 22% COMBINED $SO_3$

*Write today for generous free sample*

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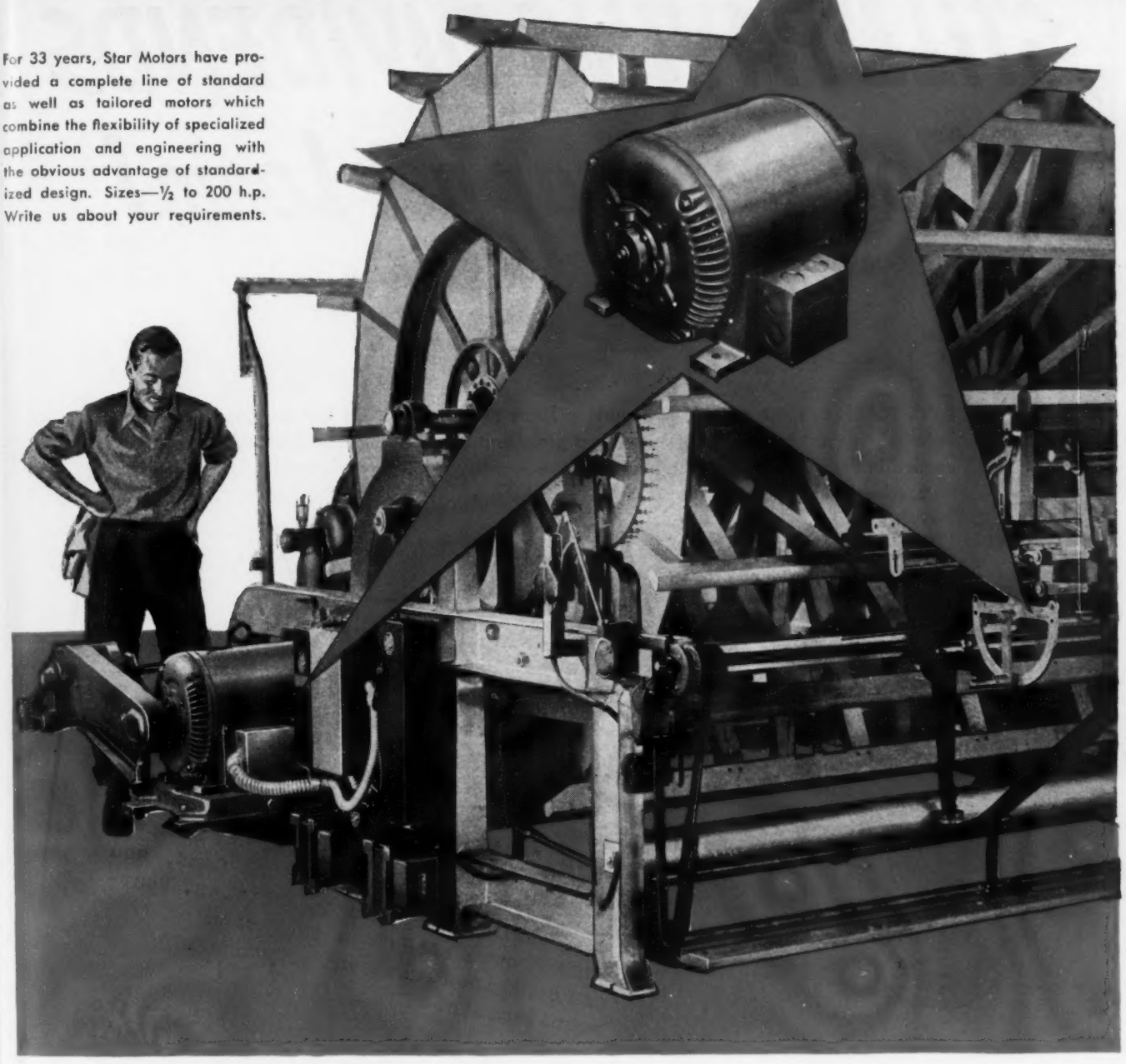
**JACQUES WOLF & CO.**

*Chemicals* **PASSAIC, N. J.**

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

# IN THE TIGHT SPOTS IT'S A STAR

For 33 years, Star Motors have provided a complete line of standard as well as tailored motors which combine the flexibility of specialized application and engineering with the obvious advantage of standardized design. Sizes—½ to 200 h.p. Write us about your requirements.



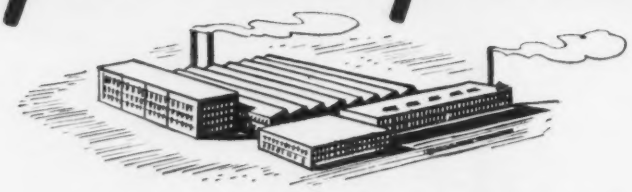
Frequently Star is asked to fit *mechanical* "tight spots" with its unique welded construction that eliminates special patterns and castings. And just as often to fit engineering "tight spots." Sipp-Eastwood warping machines, for example, warp 500 yards of rayon, acetate or nylon a minute. To meet these high speeds, Star engineering provides motors that develop intermediate speeds in addition to the four fundamental speeds. Abnormally high torque is also provided at low speed. And all without special or costly construction. STAR ELECTRIC MOTOR CO., Bloomfield, N. J.

ARMY E NAVY

*POWER* **PACKAGED** *AS YOU NEED IT*

**STAR MOTORS**

# STILL PAYING DIVIDENDS
# $7.00 per Year per Loom!



FIVE YEARS, or more than 26,000 working hours ago, Fafnir 202TT Ball Bearings were installed on the treadle rolls of looms in a prominent Southern mill. Double-sealed and unoiled in their long service, the bearings were recently removed and examined. Here's the mechanical report:

**CASE HISTORY**

## "After 26,000 hours

"Application No. 8861 Fafnir Ball Bearings 202TT on Treadle Rolls of Stafford Looms.

"In active service more than 26,000 hours. Examination showed not the slightest indication of wear on the Cams, and the bearings in perfect condition. Bearings showed effective exclusion of lint and contained lubricant commensurate with requirements.

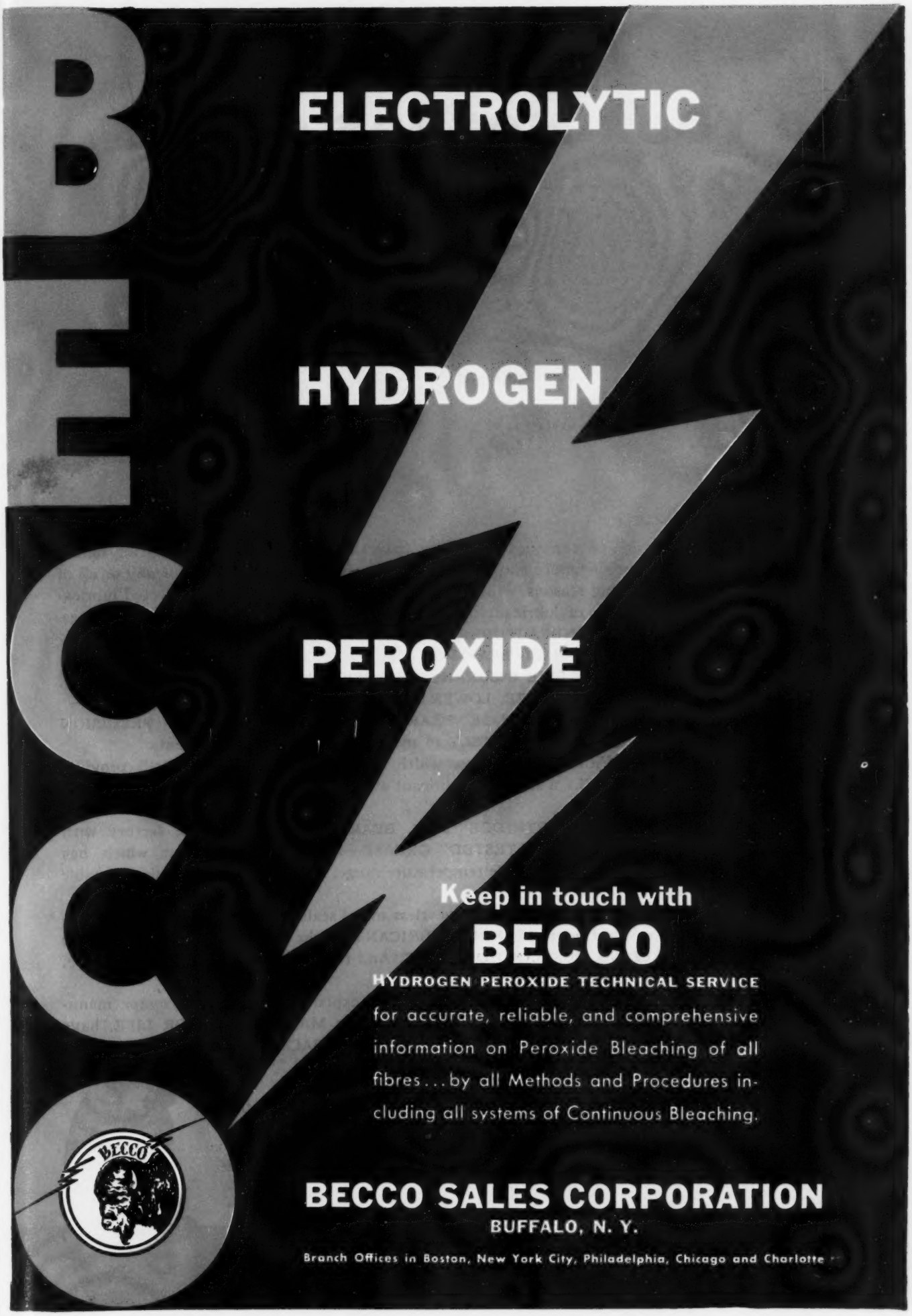
"NOTE: Without considering the saving in oil or the labor of replacing worn Cams and Treadle Rolls, this mill saved in excess of $7.00 per year per loom in Cam and Treadle Roll replacement parts alone. All Treadles will be equipped with Fafnir Ball Bearings in the future."

*Buy War Bonds and Stamps*

**Actual case histories such as this, show that Fafnir Bearings pay dividends in performance, maintenance and replacement costs. If you have a bearing problem, your Fafnir distributor will help you solve it — to your continued profit. The Fafnir Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.**

ARMY (E) NAVY

**FAFNIR**
**BALL BEARINGS**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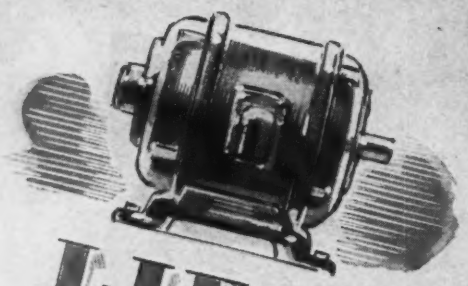
# DO YOUR MOTORS CARRY . . .



# LIFE INSURANCE

The life of a motor is no longer than the life of its bearings. Bearing failure means motor failure and shutdowns. And the bearings may fail for any or all of the following reasons:—(a) poor design and construction; (b) neglected lubrication; (c) use of lubricant of poor quality; (d) dust and dirt in the bearings.

MOTOR MANUFACTURERS WHO HAVE ADOPTED NORMA-HOFFMANN "CARTRIDGE" BALL BEARINGS ARE PROVIDING THEIR CUSTOMERS IN-BUILT MOTOR LIFE INSURANCE--IN EFFECT, A GUARANTEE OF LONGER, MORE TROUBLE-FREE, LOWER-COST MOTOR PERFORMANCE—because:—

**A.** The "CARTRIDGE" BEARING is a NORMA-HOFFMANN PRECISION product, designed EXPRESSLY to meet electric motor requirements.

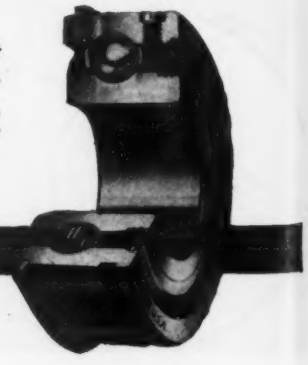
**B.** With its double-row width, the "CARTRIDGE" BEARING provides WITHIN ITSELF a supply of lubricant at least twice that of any other single-row ball bearing.

**C.** The "CARTRIDGE" BALL BEARING is loaded at the factory with NORMA "STABILITY-TESTED" GREASE—a high-duty lubricant which has exceptional life and a wide temperature range, and moreover is chemically stable and water-repellent.

**D.** The highly efficient, wearless metal seals of the "CARTRIDGE" BEARING, so effective in KEEPING LUBRICANT IN the bearing, are equally effective in KEEPING DUST AND DIRT OUT. And they are removable and replaceable, making bearing inspection easy.

These, and other, distinctive features explain why so many motor manufacturers, seeking to assure their customers MAXIMUM MOTOR LIFE, have adopted NORMA-HOFFMANN "CARTRIDGE" BALL BEARINGS for their latest and most efficient motor models.

*Ask for motors carrying the "life insurance" that NORMA-HOFFMANN "CARTRIDGE" BEARINGS provide. They will be a sound and lasting investment, returning good dividends in lower costs, longer life, and freedom from shutdowns.*



**NORMA-HOFFMANN BEARINGS CORP'N, STAMFORD, CONN. FOUNDED 1911**

**TO WIN THE WAR • WORK • FIGHT • BUY WAR BONDS**

# MARS PIPES THE TUNE

FASTER . . . FASTER . . . is the tempo of war. Dyers and dye makers are marching to the music of Mars. Busy brains are conjuring new fabrics of natural fibers, man-made fibers and blends . . . speedier methods of applying dyes and finishes.

The results of our research and experience are available to help you solve your *wartime* technical problems. Working together, we will gain in advance, profitable solutions to *post-war* problems. E. I. du Pont de Nemours & Co. (Inc), Organic Chemicals Department, Dyestuffs Division, Wilmington, Delaware.

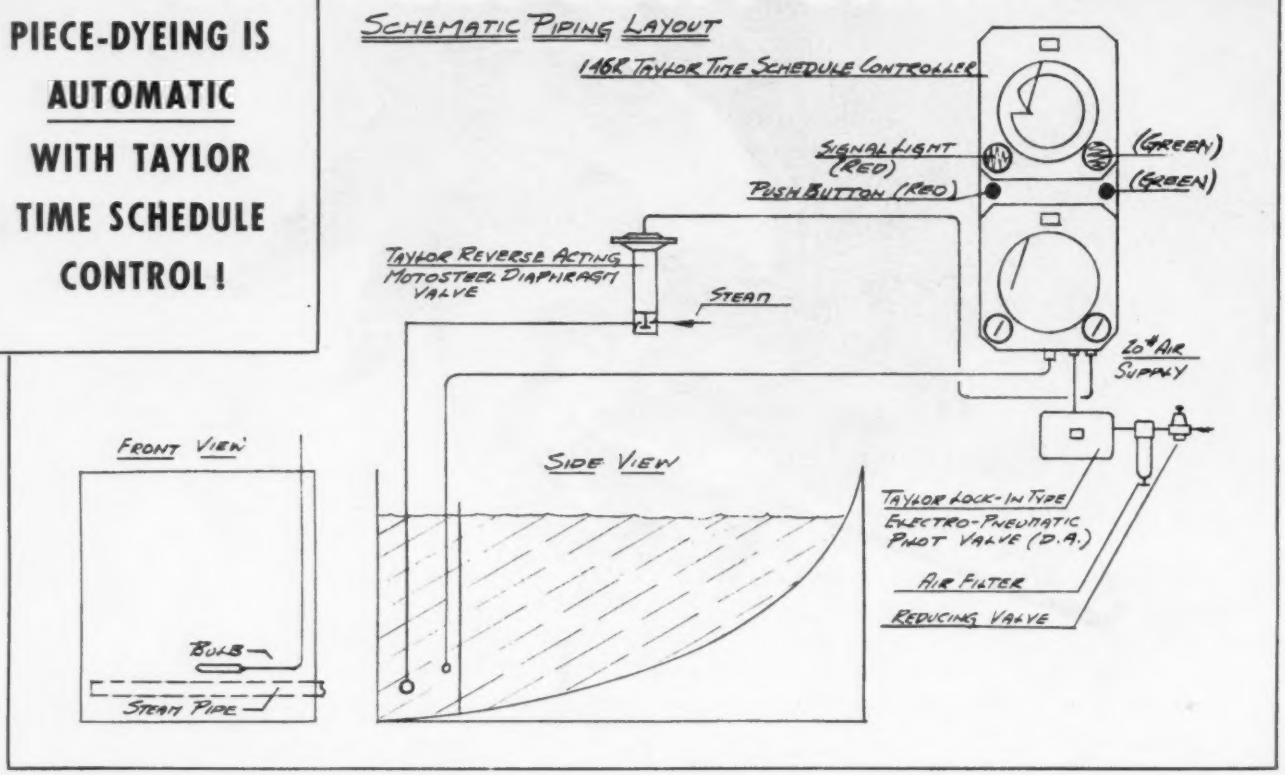
*Du Pont Dyestuffs*

BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

DU PONT DYESTUFFS

# From 100° to 215°F. in 45 minutes— at the same rate of rise every time!

**PIECE-DYEING IS AUTOMATIC WITH TAYLOR TIME SCHEDULE CONTROL!**



ANY skilled operator can run a piece-dye bath from 100° up to 210°F. in 45 minutes. The trick is to get a *uniform rate of rise,* so that at 22½ minutes you're halfway up the scale. A hard thing to do unless the operator is standing there the whole time—or unless you have a Taylor Fulscope Time Schedule Controller.

With this instrument on the job, the operator just loads the vat and pushes a button—and passes on to the next vat. The Time Schedule Controller not only finishes right on the nose—it can duplicate the same schedule *exactly* the next time! Or if the next run calls for, say 90 minutes instead of 30 or 45, all you do is make a simple change in the dial setting.

The rate of rise doesn't have to be uniform, either. It can follow any curve you want. The main thing is the Taylor Time Schedule Controller does it *automatically.* The result is better quality as well as a saving in skilled manpower.

We're still busy supplying the armed forces and top-priority industries. But we've increased our production to the point where we can supply all industry on normal delivery schedules. Ask your Taylor Field Engineer. Taylor Instrument Companies, Rochester, N. Y. and Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, humidity, flow, and liquid level.*

**TAYLOR REPAIR SERVICE.** We can now give the same prompt service as on new instruments. We have complete repair facilities at Rochester, Tulsa, and San Francisco, also in Toronto.

ARMY E NAVY

## Taylor Instruments

MEAN

## ACCURACY FIRST

IN HOME AND INDUSTRY

★ KEEP ON BUYING U. S. WAR BONDS AND STAMPS ★

# Mastery Over Materials

More important even than the nature of the materials that go into your Dayco Worsted Cots is Dayton Rubber's mastery over those materials—the proved ability to make them serve you better. That is why every Dayco Worsted Cot can handle the job for which it is intended.

Built into all Dayco Worsted Cots is the knowledge and experience of 37 progressive years of rubber achievement—the technical zeal which in just one year called for 166,000 man-hours of research and experiment on one synthetic rubber development alone—the practical follow-through which required 1,000 laboratory tests and 1,200 field tests in the same period.

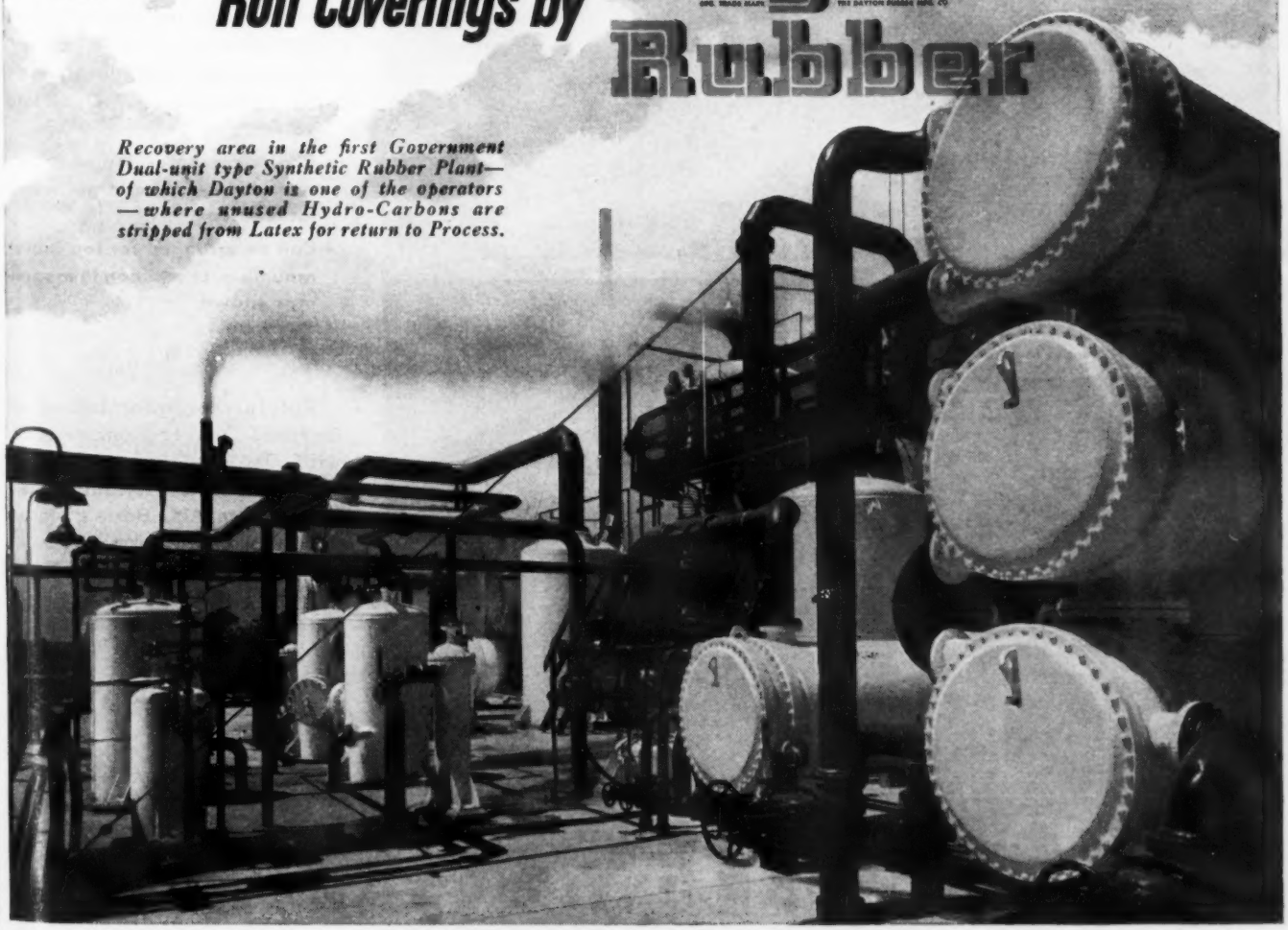
You can always be sure that Worsted Cots by Dayton will give service above and beyond that dictated by ordinary standards.

THE DAYTON RUBBER MFG. CO.
DAYTON 1, OHIO • WAYNESVILLE, N. C.
*Main Sales Office:* Woodside Bldg., Greenville, S. C.

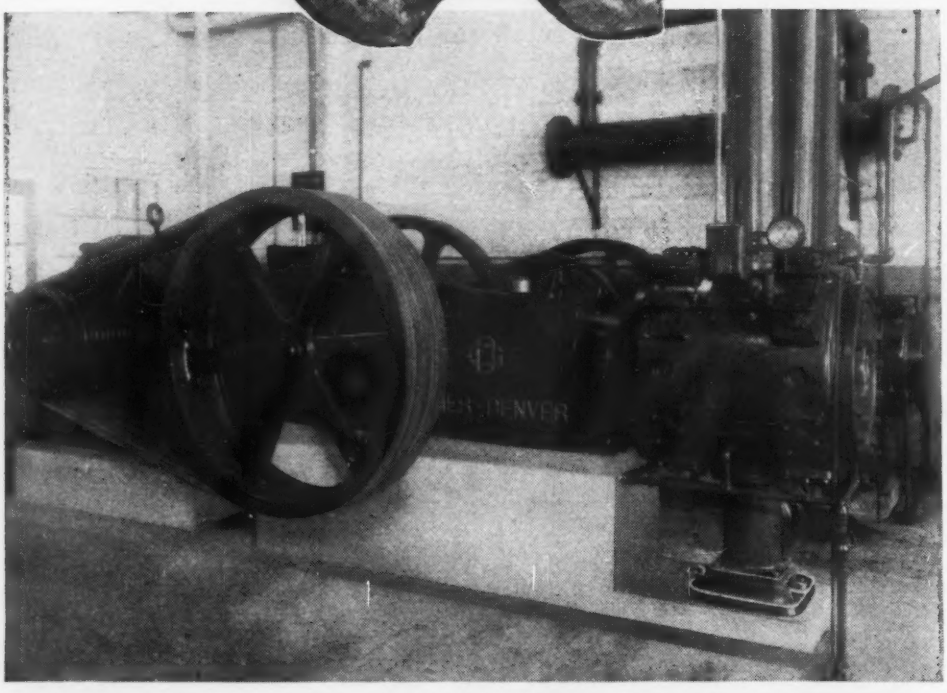
KEEP ON BUYING WAR BONDS

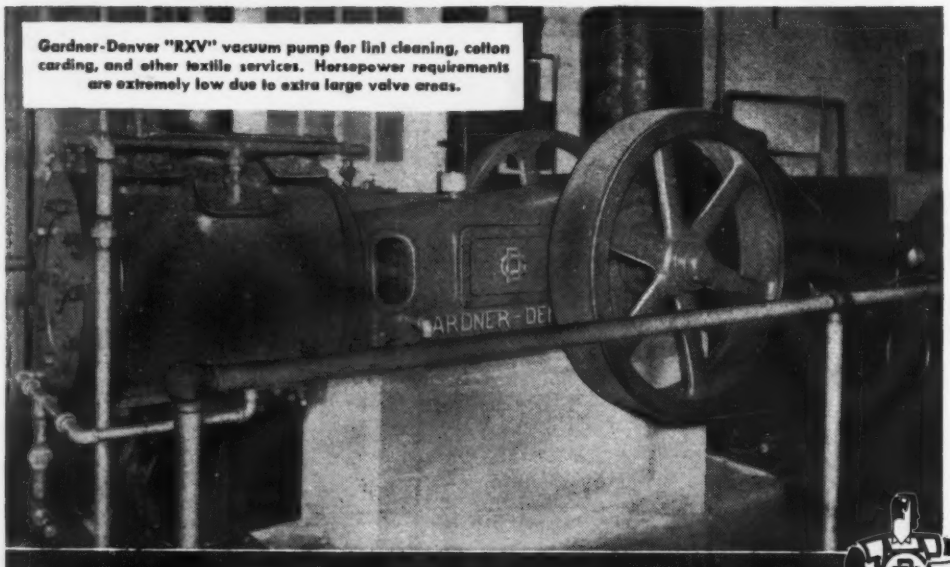
## Roll Coverings by Dayton Rubber

*Recovery area in the first Government Dual-unit type Synthetic Rubber Plant—of which Dayton is one of the operators—where unused Hydro-Carbons are stripped from Latex for return to Process.*



# ARE YOU READY FOR THIS REPLACEMENT?





Gardner-Denver "RXV" vacuum pump for lint cleaning, cotton carding, and other textile services. Horsepower requirements are extremely low due to extra large valve areas.

Now that our armies are in actual combat on so many fronts, uniforms will wear out faster than ever.

To replace them, textile mills will have to keep operating without pause—day and night.

That means equipment just can't break down—will have to keep operating at three-shift tempo.

Gardner-Denver "RX" Single-Stage Horizontal Air Compressors are built for three-shift service... designed to deliver a reliable supply of compressed air wherever it is needed—*whenever* it is needed.

## Here's Why...

- **Valve and port areas engineered for highest efficiency.**
- **Long service assured by rugged, dirt-free construction.**
- **Air output automatically regulated to fit air needs—saves horsepower.**
- **Smooth, quiet operation assured by "air-cushioned" Duo-Plate valves.**
- **Cooler discharge temperatures assured by extra-large water jacket areas.**
- **Can be arranged for top motor mounting, in addition to mountings shown.**

●

For further information on Gardner-Denver Compressors, write Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

**GARDNER-DENVER**

MAKES AIR *Cost Less* AND *Do More*

*Since 1859*

# PLANNING AHEAD IN INDUSTRY

Now is the time to make your complete engineering plans for conversion and expansion. We have had 25 years' experience in furnishing preliminary recommendations and plant layouts —and in designing, building and equipping factories, warehouses and power plants, with one contract, one responsibility, one profit. We are serving many different industries. Our suggestions, based upon helpfulness to hundreds of important manufacturers, are yours without cost or obligation. Call or write our Cleveland, New York or Birmingham office.

**The H.K. Ferguson Co.**

**ENGINEERS AND BUILDERS**

**CLEVELAND • NEW YORK • BIRMINGHAM**

# IT'S IN THE "CARDS"

*ITS in the "cards" that split-second accuracy . . . perfect timing . . . is important. And on cards like this, timing is exact . . . for Baldwin Roller chain belts are on the job.*

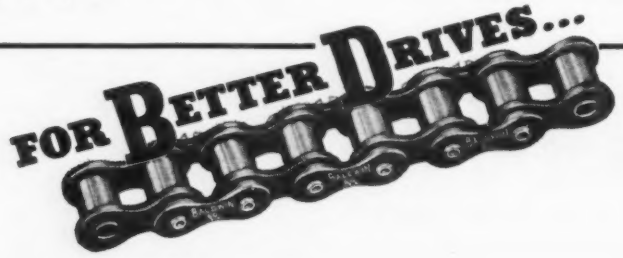
ASSURING positive, slip-free, jerk-free transmission of power, Baldwin Roller chain belts are real production helps. Because they transmit smooth, flowing power and absorb damaging shocks, waste due to uneven finished goods is eliminated . . . operating costs are reduced.

Baldwin drives can be installed easily on long or short centers . . . on cards, printing machines, twisting frames, finishing machines . . . in fact, on drives throughout your mill.

**Baldwin Roller Chain Belts give you these advantages:**

1. **Maintain constant speed ratios**
2. **No fire hazard from heat or static electricity**
3. **Low maintenance**
4. **Compact—require less space per h.p. transmitted**
5. **Quiet operation**
6. **Cleaner drives—do not gather dirt and dust**

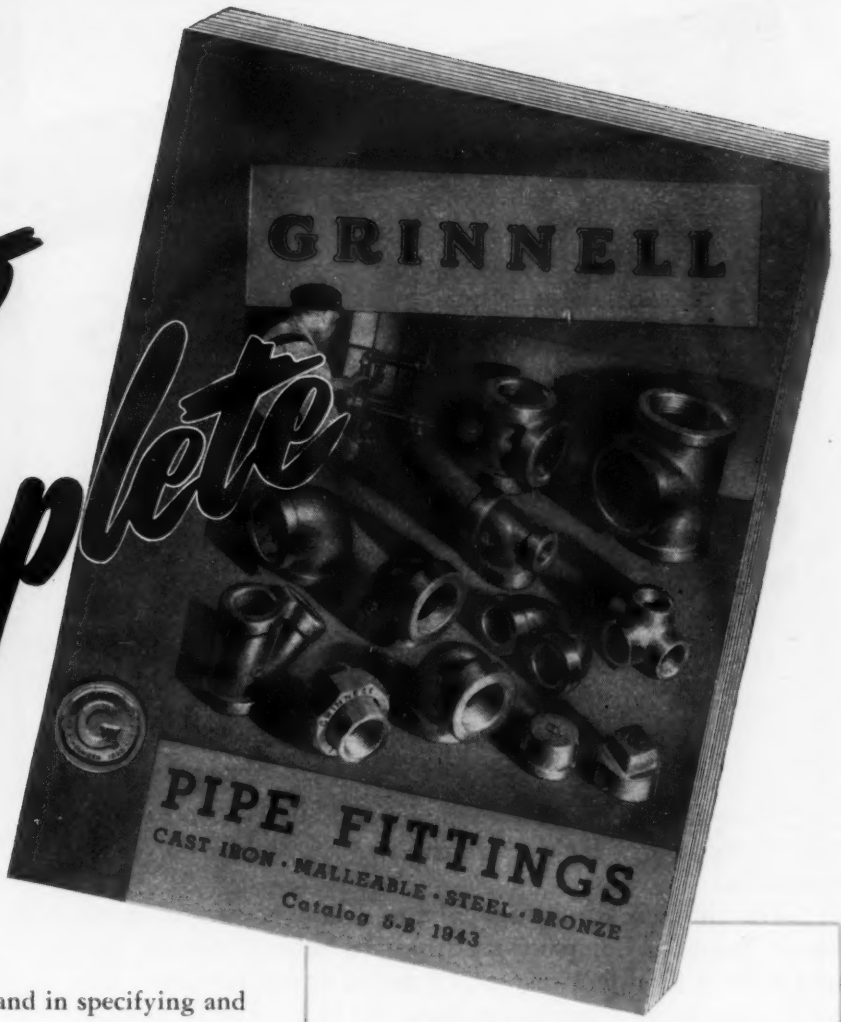
For complete information on these better drives and how they can help you, call your Baldwin man or write for your copy of Baldwin Catalog M. Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.




# BALDWIN

## ROLLER CHAIN BELTS

# It's New
# It's Complete




To help you with your piping layouts and in specifying and ordering pipe fittings for any requirement, Grinnell offers this new, complete catalog.

It includes detailed information, list prices, materials, dimensions and service pressures for Grinnell's complete line of cast iron, malleable iron, steel and bronze fittings.

For prompt service in procuring a copy, write or phone your nearby Grinnell office listed below.

GRINNELL

WHENEVER **PIPING** IS INVOLVED

## TYPES OF FITTINGS LISTED

| | | | w.s.p. |
|---|---|---|---|
| **CAST IRON,** | | | |
| | Screwed — | | |
| | | Standard | 125 lbs. |
| | | Extra Heavy | 250 lbs. |
| | | Sprinkler | 175 lbs. |
| | | Drainage | |
| | Flanged — | | |
| | | Standard | 175 lbs. |
| | | Extra Heavy | 250 lbs. |
| **MALLEABLE IRON,** | | | |
| | Screwed — | | |
| | | Standard | 150 lbs. |
| | | Extra Heavy | 300 lbs. |
| | | AAR | 300 lbs. |
| | | Plain | |
| | | Railing | |
| **STEEL,** | | | |
| | Screwed — | Wrought (Nipples & Cplgs.) | |
| | | Cast — | 1000 to 2000 lbs. |
| | | Forged — | 2000 to 6000 lbs. |
| | | (also flanges) | |
| | Flanged — | | |
| | | Cast | 150 to 1500 lbs. |
| **BRONZE,** | | | |
| | Screwed — | | |
| | | Standard | 125 lbs. |
| | | Extra Heavy | 250 lbs. |

**MISCELLANEOUS SUPPLIES**

**GRINNELL COMPANY, Inc.**
**Executive Offices, Providence, Rhode Island**

ATLANTA 2, GA.
240 North Highland Avenue, N. E.

CHARLOTTE 1, N. C.
1431 West Morehead Street

CHICAGO 9, ILL.
4425 South Western Avenue

CLEVELAND 14, OHIO
1294-6 East 55th Street

HOUSTON 1, TEXAS
1121 Rothwell Street

MINNEAPOLIS 15, MINN.
240 Seventh Avenue, South

NEW YORK 17, N. Y.
347 Madison Avenue

PHILADELPHIA 34, PA.
Erie Avenue and D Street

PROVIDENCE 1, R. I.
260 West Exchange Street

ST. LOUIS 10, MO.
1140 Central Industrial Avenue

ST. PAUL, MINN.
194 West Fourth Street

WARREN, OHIO
Dana and Paige Avenue

LOS ANGELES 13, CALIF.
520 Mateo Street

OAKLAND 7, CALIF.
2230 Peralta Street

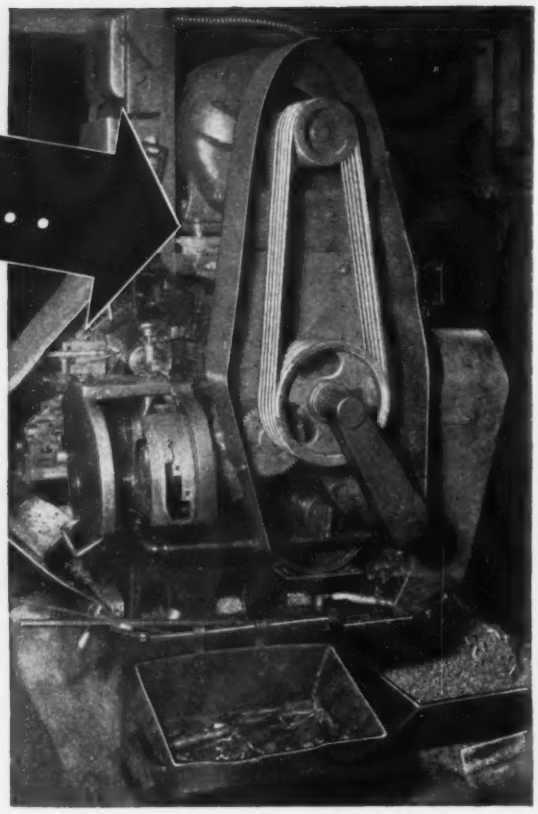
SAN FRANCISCO 7, CALIF.
601 Brannan Street, cor. Fifth

SEATTLE 1, WASH.
3101 Elliott Avenue, cor. Bay Street

On This Screw Machine . . . .

# GATES V-Belts of *Special* Synthetic *Rubber*

***wear more than 3-TIMES as long as belts of NATURAL Rubber!***



Here is an excellent example of how well it pays to consult the Gates Field Engineer on *any* problem of drive operation.

On the screw machine pictured above, the Macomb Screw Products Company used natural rubber V-belts, getting 6 to 8 months' wear at 12 to 18 hours per day. Because a *severe oil condition* existed, the Gates Field Engineer recommended changing to Gates V-belts of special synthetic rubber. These special synthetic belts are averaging 18 to 24 months' wear at *24* hours per day—an increase of 300% to 400% in belt life!

You may not have in your plant any drive which offers this *particular* problem—yet *other* service conditions may be such that a V-belt of some special construction can most profitably be used. For example, in your particular installation, V-belts with tension members composed of flexible steel cables may prove to be the most efficient and economical. Again, Rayon Cord V-belts or Static-Safety V-belts may best fit your special need.

In any case, the wisest move you can make is to phone the Gates Field Engineer. He is thoroughly competent to analyze any drive problem. He is completely informed on the nature and advantages of every type of belt. He will always recommend the practice that will be most efficient and economical for you.

***Your Gates Field Engineer Can Tell You Whether YOU Need—***

1. *Special* Synthetic V-Belts
2. Steel Cable V-Belts
3. Cotton Cord V-Belts
4. Static-Safety V-Belts
5. Rayon Cord V-Belts

***Your Telephone Directory Will Give You the Gates Field Engineer's Phone Number***

## THE GATES RUBBER COMPANY

*Engineering Offices and Stocks in All Large Industrial Centers*

442

**GATES VULCO ROPE DRIVES**

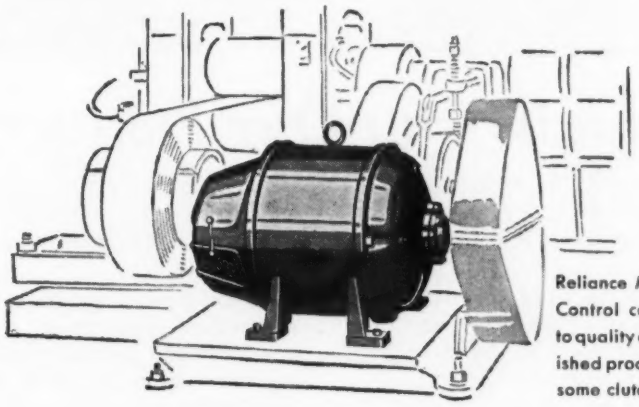
**CHICAGO, ILL.** 549 West Washington
**DALLAS, TEXAS** 2213 Griffin Street
**NEW YORK CITY** 215-219 Fourth Avenue
**BIRMINGHAM, ALA.** 801-2 Liberty National Life Building
**DENVER, COLO.** 999 South Broadway
**CHARLOTTE, N. CAROLINA** 507 Builders' Building
**GREENVILLE, S. CAROLINA** 104 West Washington Street
**ATLANTA, GA.** 738 C. & S. National Bank Building

# TENSION!

Tension Control can be an important production factor in the processing of such materials as metals, paper and cloth, which are wound on drums or cores. Tight, evenly-wound rolls and uniformity of the finished product often depend upon it.

All of the characteristics necessary to maintaining proper and constant tension control are inherent in Reliance Electric Motor-Drive.

The pioneering work done by Reliance engineers in putting motor-drive to profitable use along these lines proves again that motor-drive *can* be *more than power.* The results of their experience are available to you at any time.



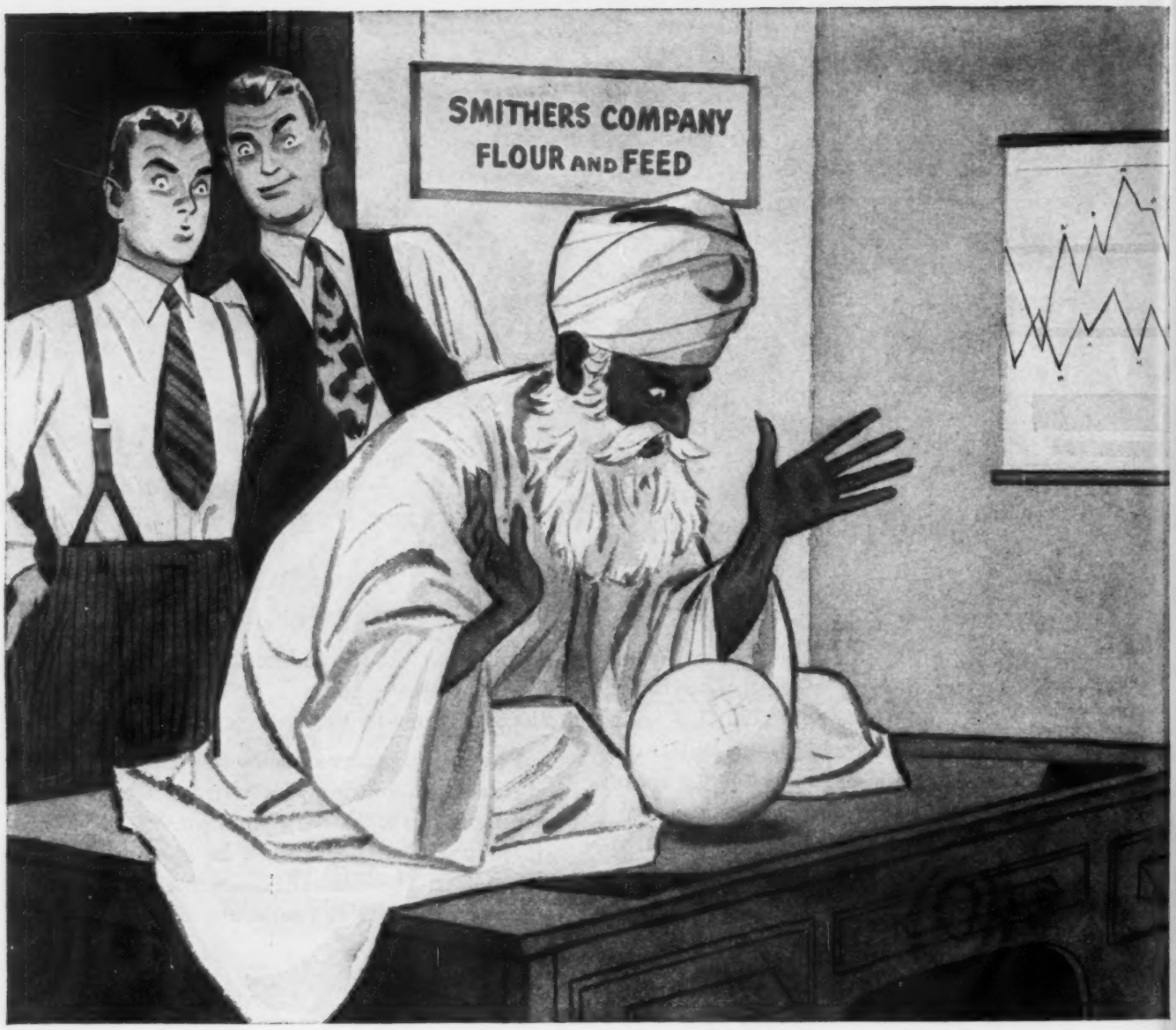
Reliance Motor-Drive for Tension Control contributes substantially to quality and uniformity of the finished product, eliminates troublesome clutches—and lowers costs.

**RELIANCE A·C D·C MOTORS**

**RELIANCE ELECTRIC & ENGINEERING CO.**

**1088 Ivanhoe Road • Cleveland, Ohio**

Birmingham • Boston • Buffalo • Chicago • Cincinnati • Detroit • Greenville (S.C.) • Houston • Los Angeles • Minneapolis
New York • Philadelphia • Pittsburgh • Portland (Ore.) • St. Louis • San Francisco • Syracuse • other principal cities.




# *"He Straightens Out Our Delivery Tangles"*

Keeping data "in one's head" is fine—in its place. But to keep mental tabs on all the complicated operations of a modern business would strain the powers of even a Hindu mystic!

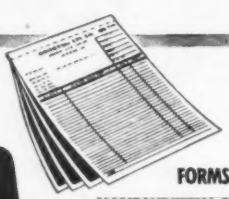
What's needed are *records*—records of orders, of deliveries, and of every stage of manufacturing operations. Records that give complete and accurate control of all processes, all transactions.

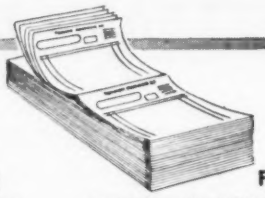
Supplying modern record forms to business is Uarco's job. Tailored to individual needs, Uarco forms routinize complicated operations—remove the guesswork—speed and simplify the work. And because Uarco has been doing that job for years, you can be sure that Uarco record forms, either autographic or typewritten, give you the latest, most up-to-date assistance.

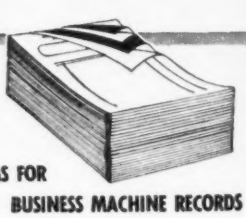
If you have a special problem concerning business forms or records, bring it to Uarco. They will consider it a privilege to study your problem and to work with you in solving it with Uarco forms. Just have the Uarco representative call!

UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*

AUTOGRAPHIC REGISTERS


FORMS FOR HANDWRITTEN RECORDS


FORMS FOR TYPEWRITTEN RECORDS


FORMS FOR BUSINESS MACHINE RECORDS

UARCO

BETTER BUSINESS RECORDS

***Wish on a Star . . .*** Every woman knows that only the finest quality stockings measure up to her fondest wish. Every hosiery manufacturer knows that no machine can knit better fabric than the needles can produce. Keep your Knitting machines young and effective with TMW Needles . . . *and remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

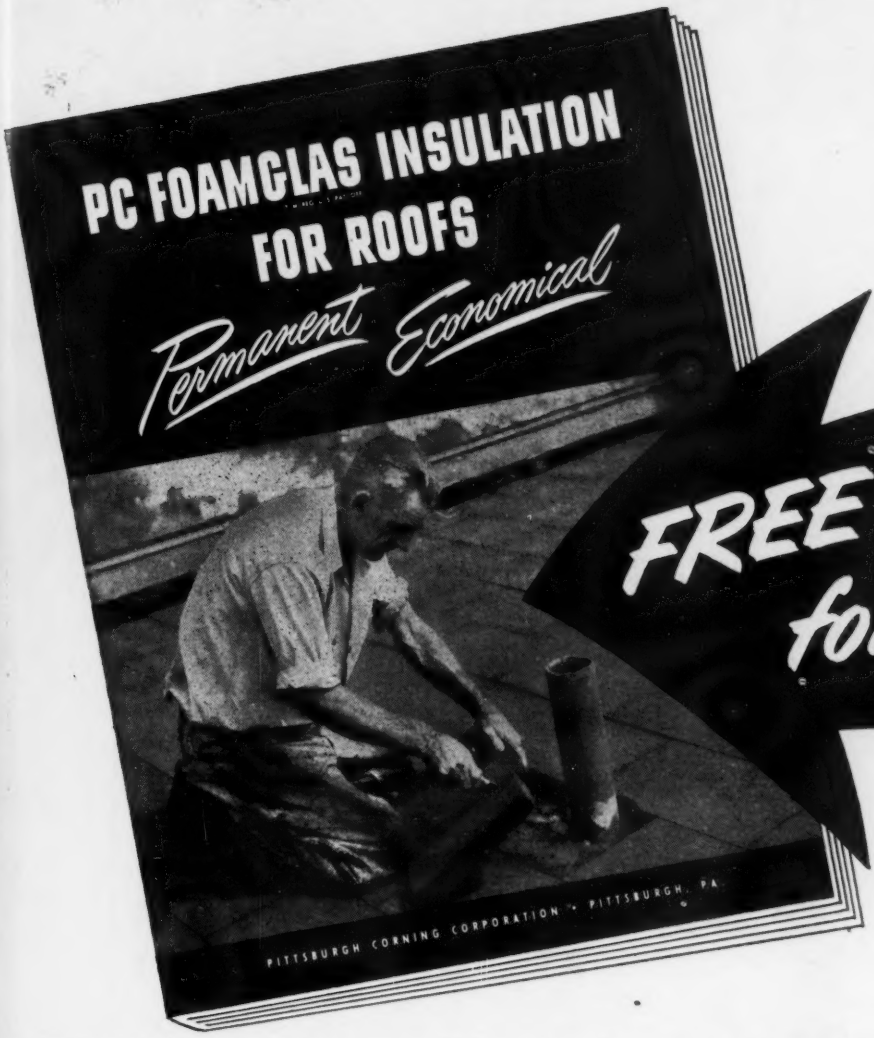
TEXTILE MACHINE WORKS • READING, PA.

**"If you do not repair your gutter, you will have your whole house to repair."**
SPANISH PROVERB

*Until the Victory is Won!* . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

First award in America of the 3-Star Army-Navy "E" made to TMW for Ordnance production up to January 25, 1943.




FREE booklet for you!

**ALL THE FACTS YOU WANT ABOUT PC FOAMGLAS, THE PERMANENT INSULATION THAT IS 9 PARTS AIR, 1 PART GLASS**

COMPLETE engineering data, twelve pages of charts, tables, graphs, illustrative photos and explanatory text—all these have been gathered, for your convenience, into our new brochure. In it you will find information that is invaluable to every man who is concerned with insulating procedure in industrial plants.

The brochure includes a full exposition of the characteristics of PC Foamglas, especially its unique abilities as an insulating material for roofs. These same qualities make PC Foamglas the ideal insulation for walls, floors, ceilings, partitions, insulated shields and screens.

Before you plan roof insulation, send for this new free booklet. It will point the way to greater satisfaction —for less money—with PC Foamglas insulation for roofs. Just fill in and mail the convenient coupon.

**PC FOAMGLAS**

T. M. REG. U. S. PAT. OFF.

**PERMANENT INSULATION**

*9 parts air · 1 part glass*

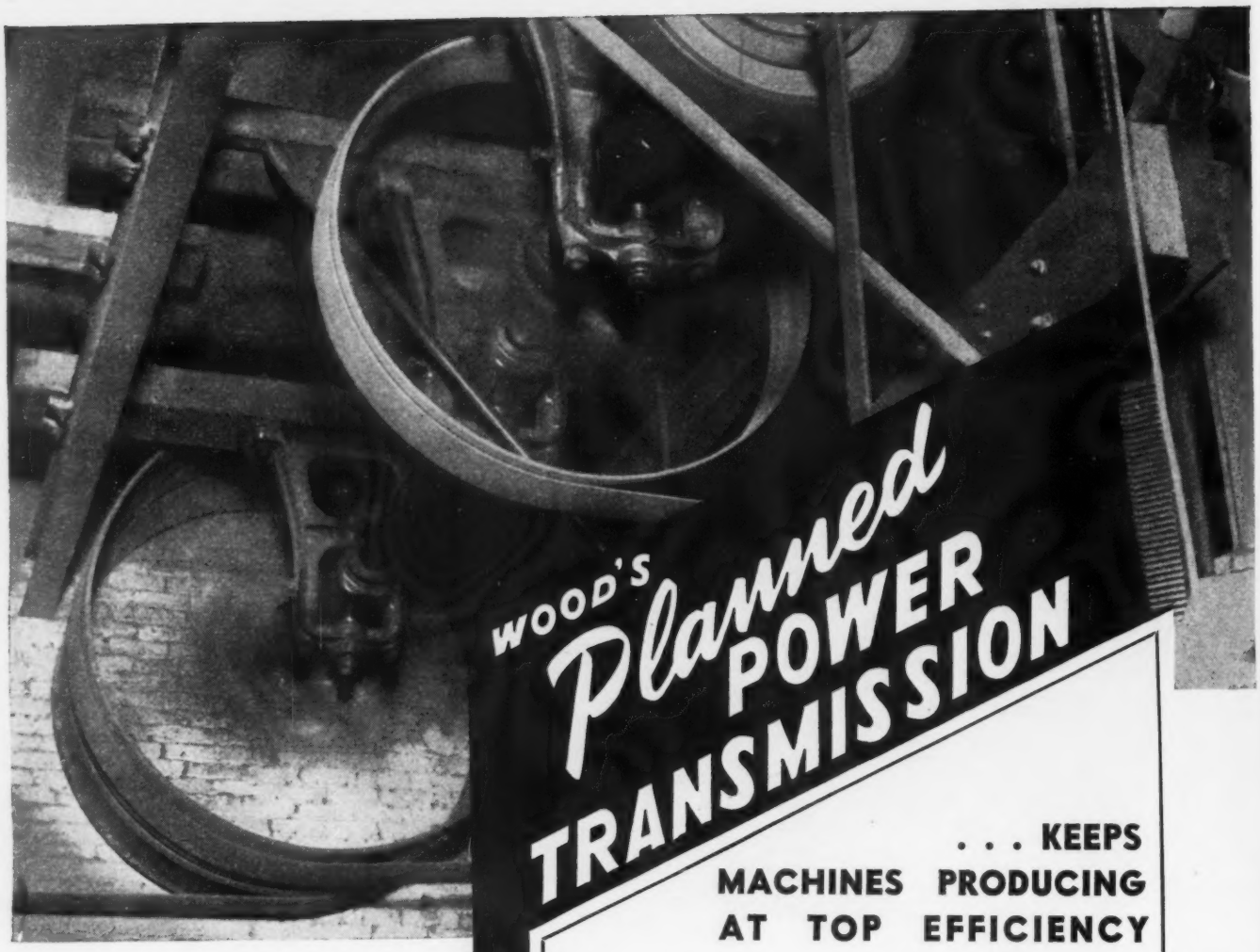
**MAIL COUPON TODAY**

Pittsburgh Corning Corporation
2070-4 Grant Building, Pittsburgh 19, Pa.
Please send along my *free* copy of your new booklet on PC Foamglas Insulation.

Name_____

Address_____

City_____ State_____



# WOOD'S Planned POWER TRANSMISSION

## . . . KEEPS MACHINES PRODUCING AT TOP EFFICIENCY

America's great need now and for years to come, is a maintained high production. To achieve this, machines must operate at high efficiency and without interruption. Wood's Planned Power Transmission will help you attain peak production. At your service are our 87 years of specialization in the development, design, manufacture and application of power transmission equipment. Call on us.

**EVERYTHING IN TRANSMISSION**
**BEARINGS • COLLARS • CLUTCHES • COUPLINGS**
**CONTACTORS • HANGERS • PILLOW BLOCKS**
**PULLEYS • V-BELT SHEAVES AND COMPLETE DRIVES**

LONG LIFE LINE

**T. B. Wood's SONS COMPANY**
**CHAMBERSBURG, PA.**

**BRANCH OFFICES**
**387-391 Atlantic Ave., Boston, Mass.**
**83 Plane Street, Newark, N. J.**
**425 First Avenue, Pittsburgh, Pa.**

**WOOD'S**
## Planned POWER TRANSMISSION

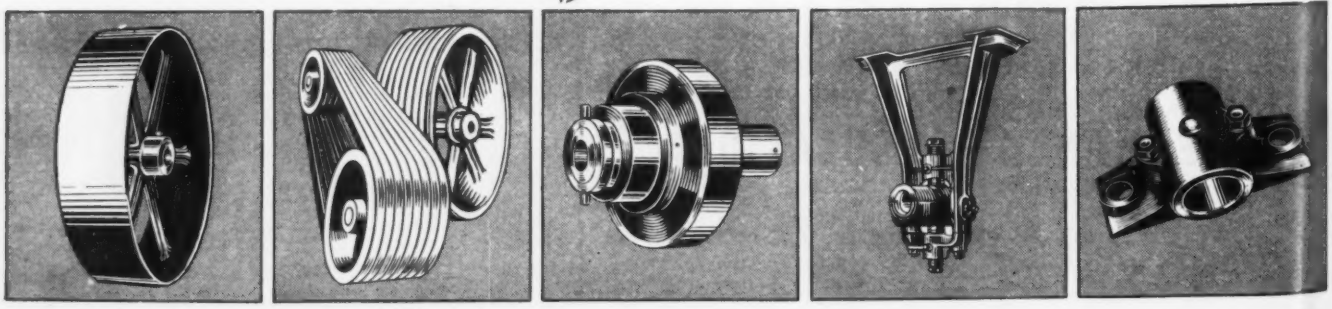
*Saves Power*
by using fewer but larger and more efficient motors.

*Cuts Initial Expense*
Larger motors are less costly to install per horsepower than smaller ones.

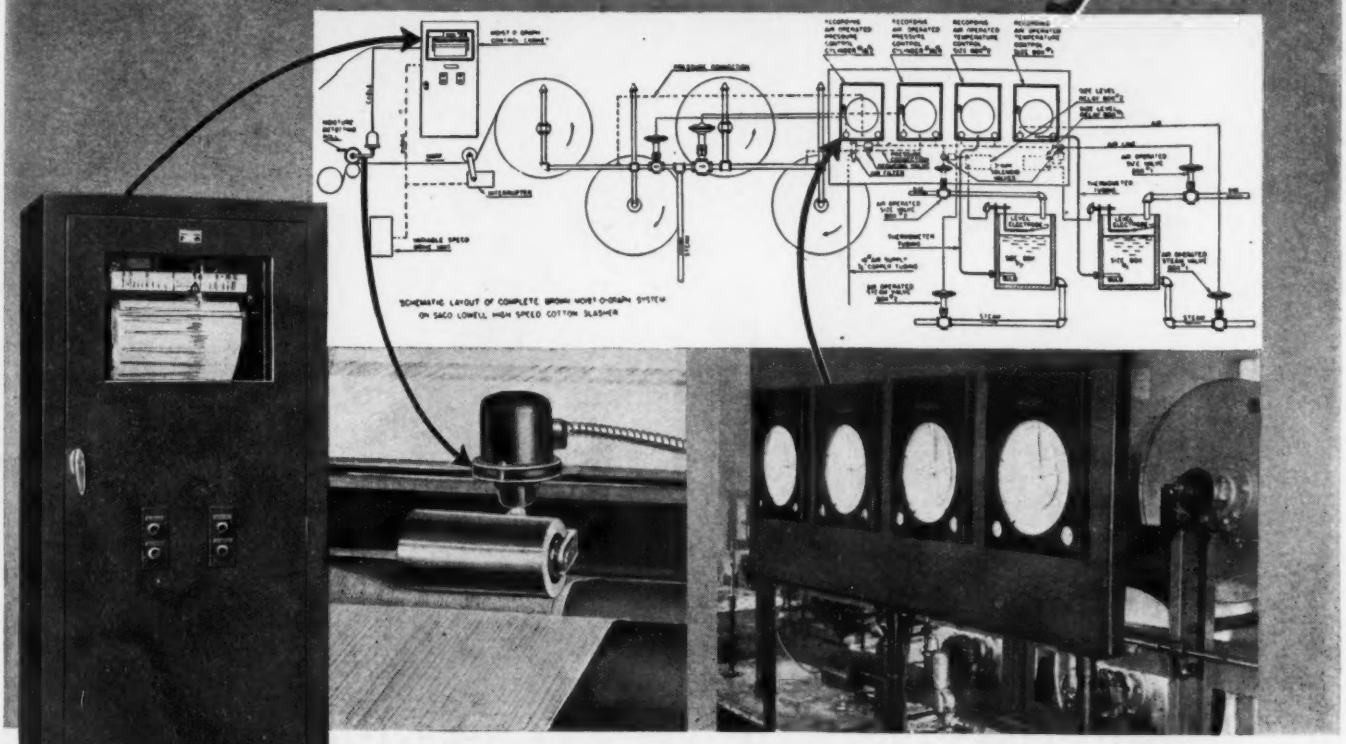
*Better Power Factor*
because of the use of larger, more fully loaded motors.

*Lowers Connected Loads*
through proper grouping of production machines.

**—BUY WAR BONDS—**



# WHAT USERS LIKE - about this Slasher Control System



The Moisture Detector Roll.

The Live Steam Side of the Cylinders showing Regulating Valves and Pressure-Recording Instruments.

MOIST-o-GRAPH Recorder Controller in Lint-Proof Cabinet.

## MOIST-o-GRAPH Directly Measures Moisture Content and RECORDS Per Cent Regain

At the Lockwood Company Mills, Waterville, Maine, where the Brown Moist-o-Graph Slasher Speed Control System is installed on a Saco-Lowell Model C Slasher, the following advantages have been noted:

1. Production per machine increases, while costs decrease.
2. Regain in the warp is closely limited by precise control of the yarn speed over the cylinders.
3. A visual, permanent record of the moisture content of every beam from beginning to end.
4. Elimination of damage to the yarn by over-drying, breakdown of the sizing mixture or other fibre damages.
5. More even application of the size gives better penetration. Efficient removal of the surface surplus saves size materials and reduces shedding in the weave room.
6. Better drying removes the danger from mildew and other fungus growth.
7. Definite saving in steam per pound of yarn dried.
8. Better size warps increase weave room efficiency.

Brown MOIST-o-GRAPH operates on the principle that, for every per cent regain, yarn has a corresponding electrical resistance. As the yarn passes over the back press roll—the MOIST-o-GRAPH detecting roller, in direct contact with the yarn, records moisture content continuously in terms of per cent regain.

The Brown MOIST-o-GRAPH is easy to install on cotton and rayon slashers.

*Write*

**THE BROWN INSTRUMENT COMPANY**

*a division of Minneapolis-Honeywell Regulator Company, Minneapolis, Minn.*

**4509 Wayne Avenue, Philadelphia, Pa.**

**Offices in all principal cities. 119 Peter Street, Toronto, Canada — Wadsworth Road, Perivale, Middlesex, England— Nybrokajen 7, Stockholm, Sweden.**

**BROWN MOIST-O-GRAPH**

*To Measure and Control is to Economize*

When you are planning ways and means to increase production and lower costs during the critical months ahead, ask yourself this important question: "Are we getting the many benefits of scientific lubrication?"

If there is any doubt in your mind on this vital matter, call in a Gulf Lubrication Service Engineer and ask him to work with your operating men to install the kind of lubrication practice that improves efficiency, cuts costs, and minimizes fire hazard in every mill department.

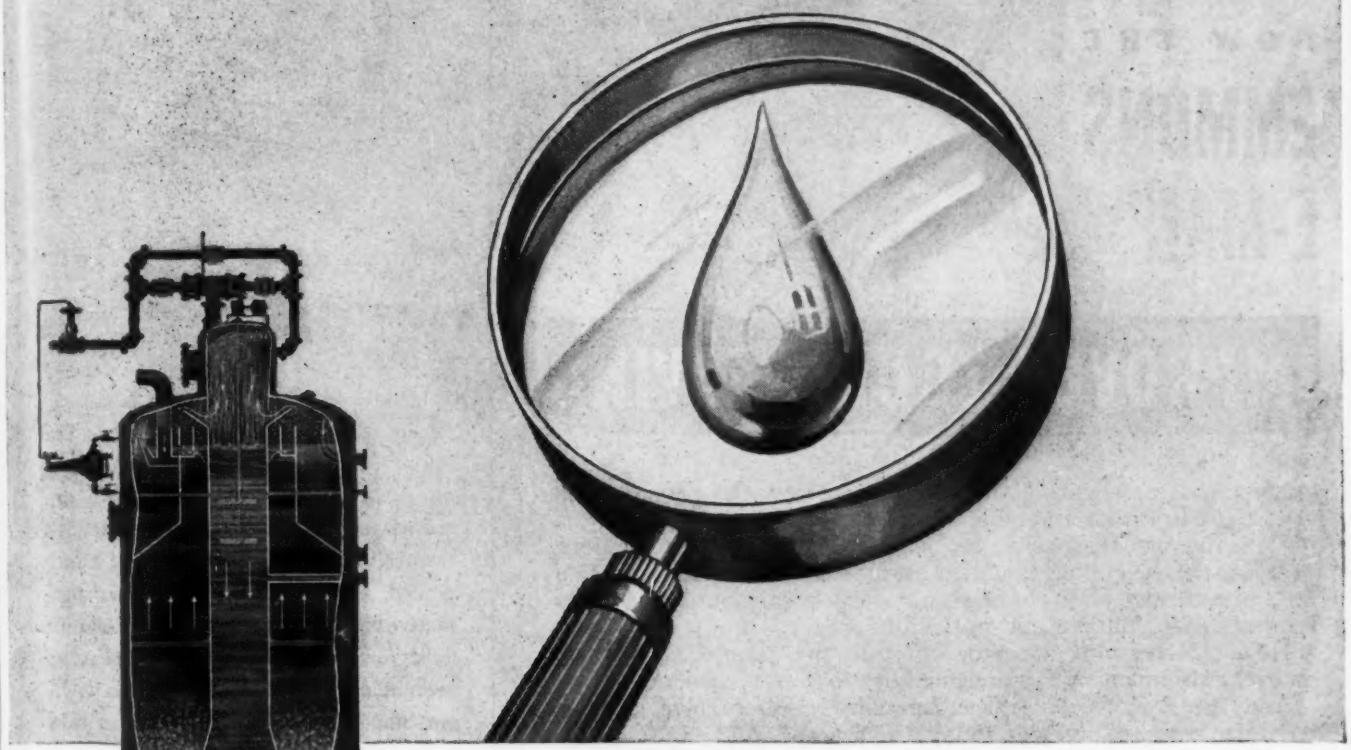
Then, for continuous year-round benefits in your mill, keep the Gulf Service Engineer "in the picture."

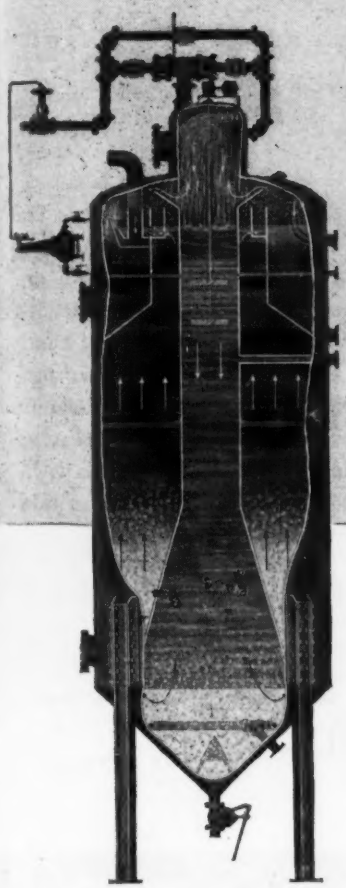
**Gulf Oil Corporation · Gulf Refining Company**
**Gulf Building, Pittsburgh, Pa.**

***BACK THE ATTACK . . .***
***BUY MORE WAR BONDS!***

GULF INDUSTRIAL LUBRICATION

# $H_2O$ ... and what else ?





*Cross-section view of a Graver Hot Process Water Softener with Deaerating Equipment.*

**RAW WATER is seldom fit for boiler feed use. And it's the extra ingredients that cause the trouble . . . calcium and magnesium bicarbonates, for instance. When heated, these compounds become insoluble . . . form scale on the boiler tubes . . . reduce heat transfer efficiency . . . and even cause localized overheating.**

**Graver Hot Process Water Softeners effectively remove these impurities in the raw water supply . . . improve boiler efficiency . . . eliminate frequent shutdowns for tube cleaning . . . and materially reduce the cost of maintenance and repair. It's a job they're doing in hundreds of plants all over the country . . . efficiently and economically.**

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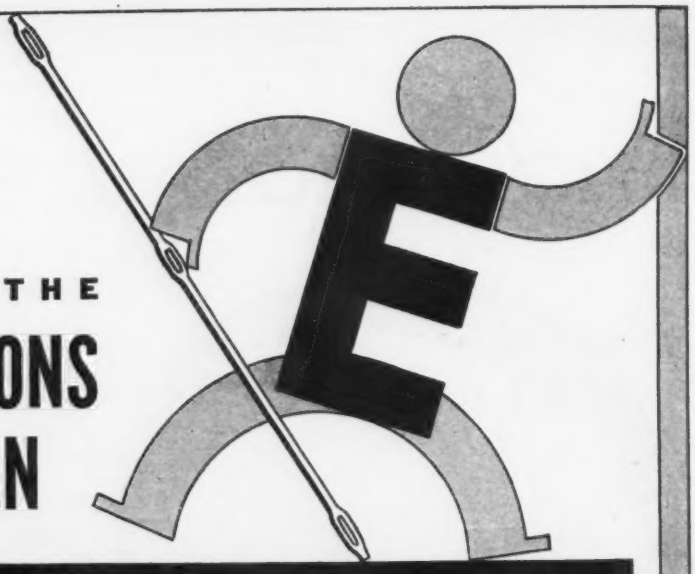

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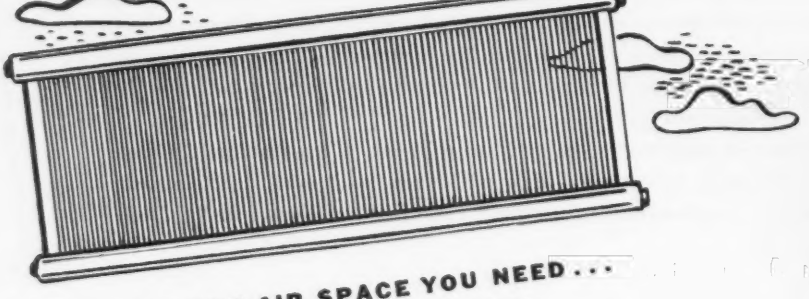

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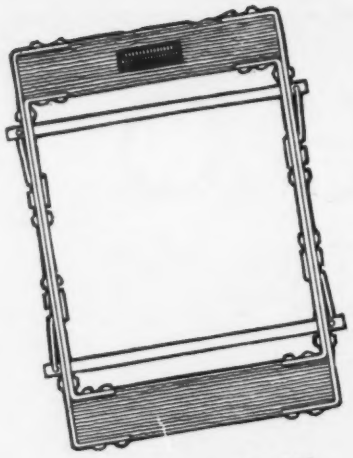

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THE SIGN
OF THE DODGE
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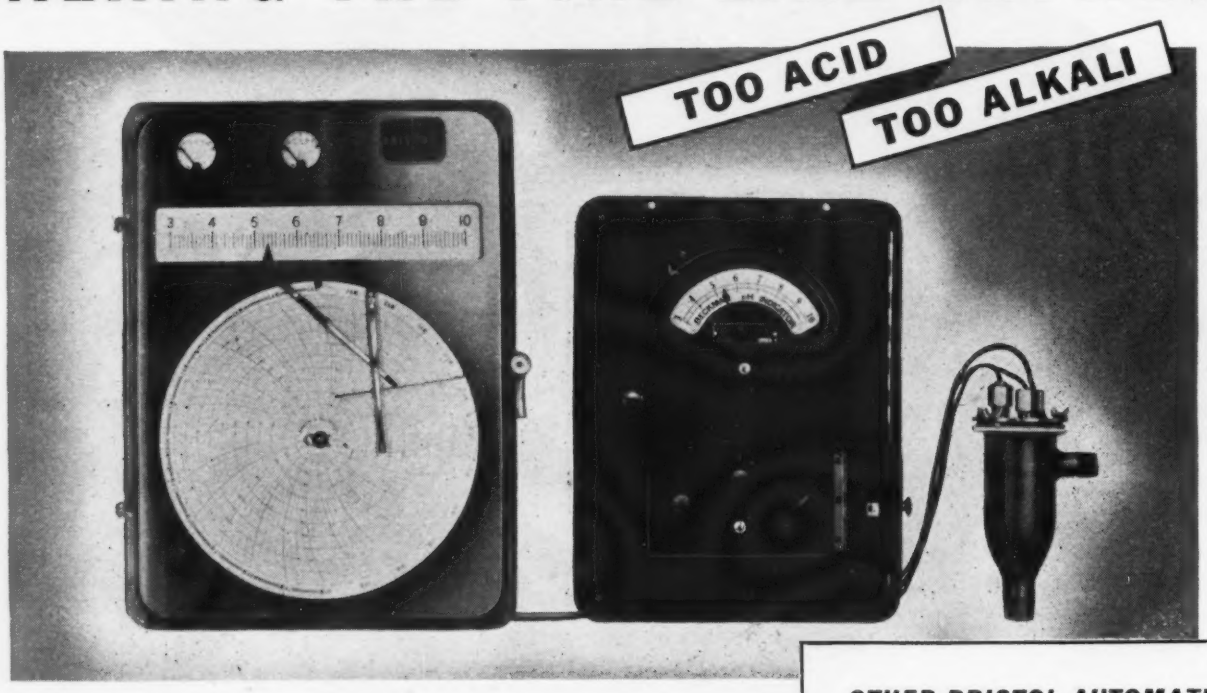
## *STEADFAST HELP IN*

# WALKING THE FINE LINE BETWEEN

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**AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS**

# *Free Enterprise*

## *. . . INCENTIVES AND TAXATION*

There are three principal ways of making a living:

1. Getting on someone's payroll
2. Lending one's savings to business enterprises
3. Starting, or helping to start, a business enterprise

About three out of four of us fall in the first group—we are ***job-holders.*** Millions of us get some income, large or small, by lending our savings—directly or through such channels as insurance companies. We are suppliers of ***loan-capital.*** About one out of four of us has his own business enterprise, and several millions of us are part owners of business enterprises. Those of us who go into business for ourselves and those of us who are part owners of enterprises are ***job-givers.***

The amount of employment in a community depends, in the main, on the number of persons who attempt to make their living, or part of their living, by giving jobs to others, rather than by getting on someone's payroll. A community seriously desiring a high level of employment and a high standard of living will strive to make job-giving attractive and to encourage a large part of its population to be job-givers rather than merely job-holders.

The number of men who attempt to make their living in whole or in part by starting new businesses or by expanding old ones depends upon the outlook for profits. When the outlook for profits improves, thousands of new jobs open up and thousands of men go to work; and, as men go to work, the farmer and everybody else benefits. When the prospect for profits becomes darker, the demand for labor, capital, and raw materials drops. It may be roughly estimated that an improvement in the prospect for profits of one billion dollars raises the demand for labor by anywhere from two billion dollars to five billion dollars.

One of the principal determinants of the outlook for profits is the amount and the nature of taxes. After the war, the Federal government will need to raise each year about twenty billion dollars in taxes—three times the amount required before the war, and six times the amount re-

quired in the Twenties. In the Twenties, the tax needs of the Federal government were roughly twice as large as corporate profits in a good year. After the war, Federal revenue needs will be roughly three times corporate profits in a good year. Obviously, it will be much more difficult, after the war, for the government to meet its needs *without discouraging enterprise,* and therefore without diminishing the number of jobs, than it was before the war. Far more than ever before, it will be necessary for the government in developing a tax program to take account of the effect of taxes upon employment and the standard of living. This means that it will be important for each and every citizen to give attention to these matters—because the policies of the government reflect, in the main, the thinking of the citizens.

Some taxes seriously discourage individuals and business firms from undertaking new and enlarged operations. Other taxes have little or no adverse effect on investments. Some taxes are a burden on consumption, affecting the sales of specific commodities, depending on the nature of the taxes. It is obvious that different kinds of taxes have different economic influences. *We must understand the forces that determine the level of employment and consider the tax program in relation to other measures designed to create more jobs.*

What are the tests of a good tax system?

1. **Taxes should be designed to encourage production and enterprise and to make it attractive for a large number of people to earn all or part of their living by giving jobs to others.**

2. **Taxation must be fair in principle and administration, with no discrimination between persons in similar circumstances.**

3. **Taxes should be apparent and not concealed, and should be levied, in the main, directly upon individuals so that each of us will know how much our government is costing him. A moderate income tax at the lower income levels will bring a greater awareness of responsibility than will heavy taxes on consumption which the taxpayer does not see because they are hidden in the prices he pays.**

4. **In the aggregate, taxes should be somewhat progressive.**

5. **The tax system should be coordinated with the broader objectives of monetary and fiscal policy.**

6. **Federal, state, and local tax policies should be integrated as to principles and objectives.**

Judged by these standards, our present tax system is extremely unsatisfactory; in fact, it is actually damaging. It is a conglomeration of hidden and direct taxes and of conflicting taxing jurisdictions and policies, with no comprehensive economic motive. It is distorted to appease pressure groups and includes uneconomic punitive measures. It is full of needless complexities. It is a paradise for tax lawyers and a source of confusion and despair for the honest, enterprising business man. In fact, it would seem almost as if our tax laws had been written by some fifth columnist for the purpose of making private enterprise unworkable. We in America pretend to believe in the pioneer spirit, but no one would ever suspect it by looking at our tax system.

When the war is over, there must be a thorough reform of our entire tax system. Federal taxes can and should be reduced substantially; and, in the process of reduction, changes can more readily be introduced. At that time, steps can be taken to achieve some degree of coordination and unity of purpose among federal, state, and local taxing agencies. Taxes play too important a role in our total economic life to ignore the adverse consequences of unrelated and inconsistent policies of different taxing jurisdictions.

The following reform measures are needed in federal taxation:

1. **Repeal of the excess profits tax at the earliest possible date after inflationary dangers subside. In the case of most enterprises, the excess profits tax destroys all incentive to do a larger volume of business than in 1939; it appropriates virtually all increase in profits above the level of 1939.**

2. **Coordinate corporation and individual income taxes so as to avoid double taxation and impediments to risk-taking. Preferably, corporation income taxes should be wholly eliminated. Otherwise, the corporation tax rates should be reduced to the lowest effective rate on personal incomes. Full credit should be given to stockholders for all corporate income taxes paid.**

3. **Encourage competition and particularly the formation of new enterprises by allowing new corporations generous tax exemptions for a period of five years. Extend the same principle to unincorporated concerns.**

4. **Encourage risk-taking (and hence job-**

giving) through extending the loss carry-over to six years or more.

5. Provide for averaging incomes over a period of years in order to remove discrimination against those with irregular incomes and those who take risks of loss in business ventures.

6. Rely upon the personal income tax as the main source of revenue, with broad coverage. The reduction in total taxes after the war should favor the elimination of excise taxes before reducing income taxes.

7. Reduce the upper range of personal income tax rates to a maximum of perhaps fifty to sixty per cent so that risk-taking investments will be really attractive. Higher rates are punitive in character, yield small receipts, and throttle risk-taking.

8. Encourage risk-taking by individuals in the higher brackets by making the surtax on incomes of $20,000 a year or more half as much on income in the form of dividends as on income in the form of salaries or interest.

9. Encourage risk-taking by individuals by permitting capital losses to be charged against general income provided the reduction of tax liability in any one year is not more than fifty per cent.

10. Repeal the tax-exempt privilege for all *new* securities issued by all governmental jurisdictions.

11. Eliminate excise taxes which place a disproportionate burden on persons with lower incomes so as to encourage greater consumption and provide an expanded market for our vast industrial capacity.

12. Reform tax administration to simplify forms and procedures, to broaden the scope of enforcement, and to encourage the spirit of fairness.

With such reforms and continuing reappraisal of the tax program as it affects the economic situation, we can look toward taxation as an instrument of constructive influence in giving the fullest encouragement to free enterprise and in attaining continued prosperity.

James H. McGraw, Jr.

*President, McGraw-Hill Publishing Company, Inc.*

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## FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT – CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

# THE INDUSTRY SPEAKS ON POSTWAR PROBLEMS

**HIGHLIGHTS:** Inquiry by TEXTILE WORLD Shows Mill Men Concerned Over Sixteen Postwar Problems — Labor-Management Relations Rated Most Important — Replacing Worn-Out and Obsolete Manufacturing Facilities in Second Place

INDUSTRY'S SELECTION OF POSTWAR PROBLEMS
0% 10% 20% 30% 40% 50% 60% 70% 80%
1—Maintaining Mutually Satisfactory Relations with Labor 77%
2—Replacing Worn-out and Obsolete Buildings, Machines, and Equipment 64%
3—Reducing Costs of Manufacture 62%
4—Reemploying Returning Service Men 58%
5—Developing New Products 55%
6—Avoiding Overproduction 43%
7—Meeting Burdensome Taxation 39%
8—Meeting Competition from Other Divisions of the Textile Industry 32%
9—Complying with Government Regulations 32%
10—Reconverting Mill to Civilian Production 27%
11—Meeting Problems of Inflation 25%
12—Meeting Foreign Competition 24%
13—Building Export Markets 21%
14—Meeting Competition from Other Industries 17%
15—Rebuilding Sales Organizations 14%
16—Financing Postwar Operations 11%
17—Other Problems 9%
0% 10% 20% 30% 40% 50% 60% 70% 80%

FROM THE VIEWPOINT of America's participation, the war becomes daily more savage and more costly in men and equipment. And yet it moves closer to its end. Active as most of us are in the win-the-war job, we realize we must glance occasionally—even if apprehensively—ahead. What are the problems of the postwar era for which we must prepare?

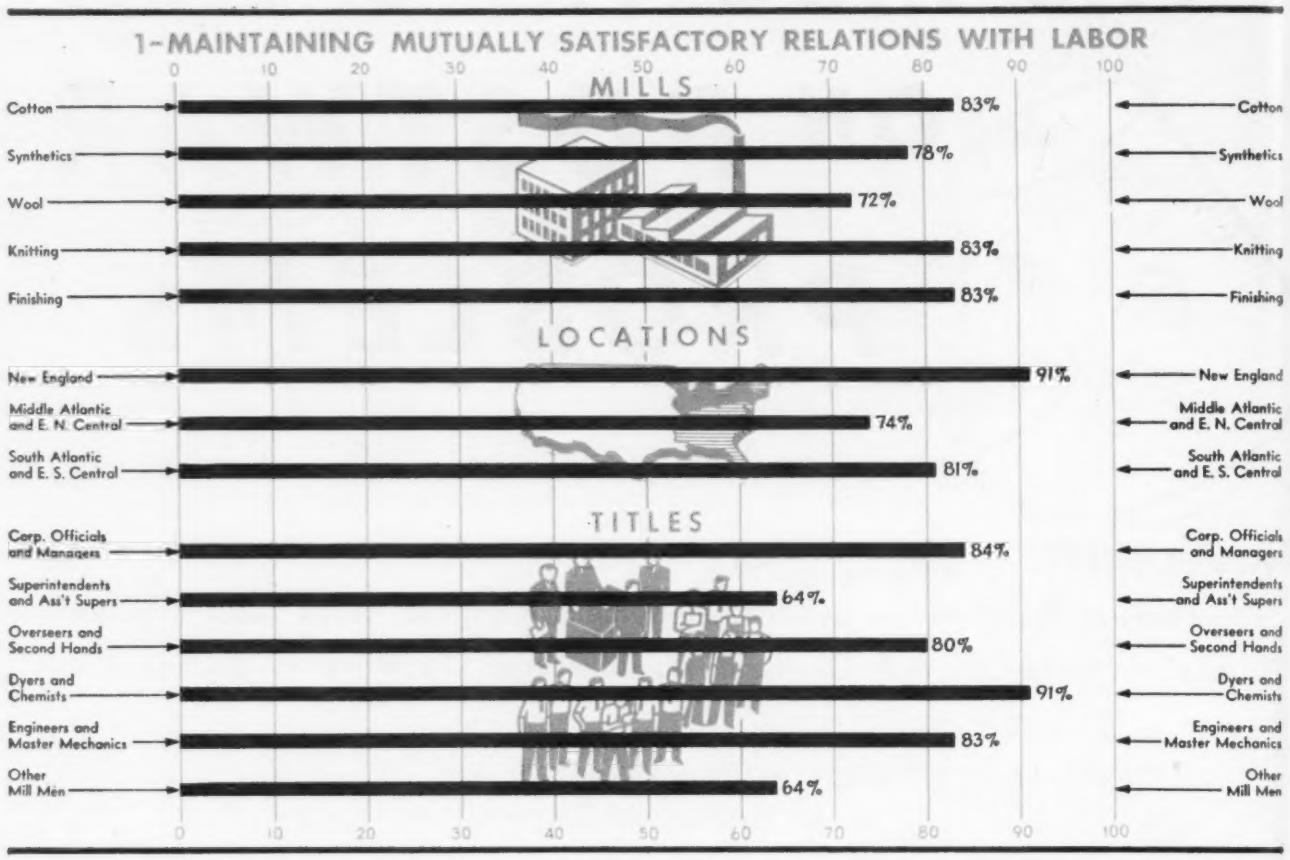
To help the industry analyze itself, TEXTILE WORLD obtained from over 200 representative mill men—selected at random throughout the industry—opinions as to what are the major problems which the cessation of hostilities will bring.

In the chart on this page will be found the overall response of these men. Most of them specified several problems, and the horizontal line opposite each problem shows the percentage of the total men who included it. Thus, 77% expressed themselves as particularly concerned over the problem of maintaining mutually satisfactory relations with labor, 64% were concerned over replacing worn-out and obsolete manufacturing facilities, 62% specified reducing manufacturing costs, and so on. The item "Other Problems" encompassed a miscellany of matters, no one of which received a sufficiently high vote to call for individual tabulation.

On the following pages we break

down parts of the total return to show just how men in specific jobs, in different types of mills, and in diverse sections of the country voted; and we attempt to explain what, in our opinion, are the reasons for some of their votes. We have also asked qualified representatives of the industry to comment on these problems and suggest solutions.

It is our hope that study of the entire section by any individual will suggest factors that he should not be overlooking, will make clear to him what his contemporaries are thinking and why, and will thus help him to prepare adequately for the new era which is coming.




## 1—MAINTAINING MUTUALLY SATISFACTORY RELATIONS WITH LABOR

ALL TYPES OF MILLS appear to regard the labor-relations problem as important, although wool mills—with recently a good record in the matter of labor difficulties—appear less concerned than the others. Geographically, New England mills are on the whole the most concerned, a fact which probably reflects a long and varied labor history and the currently somewhat higher labor costs. The superintendent group is less intensely interested than the top-management and overseer groups. Why? Perhaps because labor policies are commonly formulated by top management and ultimately executed by the supervisors closest to the operating employees. In the postwar era, would this major problem be handled better if the superintendents took more interest in it? And dyers and chemists—and engineers and master mechanics—why are they so interested? Perhaps men in the so-called skilled trades, who supposedly are required to do more analyzing as a part of their regular work, do more analyzing of more abstruse problems also.

*Comments by* **W. M. McLAURINE**, *Secretary and Treasurer, American Cotton Manufacturers Association, Charlotte, N. C.*

Too many people see all of life patterned by the immediate circumstances. Labor at the present time, under the impact of a sympathetic and political government, may feel that there will be no end to wage increases and that, when once a recession comes, their machinery of control will prevent decreases. Such ideas are those of people who live in "a fool's paradise." There are social and economic urges acting in and upon our society that no group can control. The more out of line one group gets in its enthusiastic and misguided program, the more serious and disastrous will be the reaction.

During the past few years, labor in many instances has swung away from management and followed high-powered political leaders who are building up a philosophy and plans that will ultimately wreck it unless they are modified and brought into a relativity with other sectors of the social order. Labor and management must work more closely on their postwar plans. Competitions at home and abroad are going to strike the textile industry terrific blows; hence industry and management must brace themselves as a team so they can do the needful when the blow comes.

Jobs are going to be scarcer in the textile industry. Wages, one factor which will determine the future progress of the industry, must not be frozen. In times of stress, all must have the greatest freedom. Prices of raw products, and all factors entering the industrial program, must be elastic.

*Comments by* **GLENN GARDINER**, *Assistant to the President, Forstmann Woolen Co., Passaic, N. J.*

Our national future is closely tied up to the productivity per man per hour which will be established in the post-

war period. Our standards of living in a world of foreign competition after the war will depend largely upon our maintenance of higher productivity per man per hour than elsewhere in the world. If we fail in this, we fail in competition from the cheap-labor countries.

Productivity is closely linked to good relations between management and worker. Unless management can get over to its workers an understanding and appreciation of the importance of worker productivity, it will be natural for workers to incline toward restriction of output when volume of employment decreases.

High productivity is impossible without good labor relations. Mutual goodwill, understanding, and confidence are the very basis of good labor relations. The importance of these relations is such that top management cannot afford to give this function of management the "brush-off" and leave it to the exclusive handling of a personnel department. Good labor relations must be built through the line organization. Such relations will never be any better than they are made by the supervisors who are at the point of contact with the workers.

From now on it is important that top management pay increasing attention to the kind of supervision that is practiced.

## 2—REPLACING WORN-OUT AND OBSOLETE BUILDINGS, MACHINES, AND EQUIPMENT

THE MANY NEW and improved finishing machines and processes which have been developed within recent years may have served to make finishing plants particularly aware of the replacement problem, as indicated in Chart 2. Many important synthetics plants, on the other hand, are already equipped with relatively new and efficient machinery. Engineers and master mechanics, who are accustomed to taking changes in their stride, do not seem concerned.

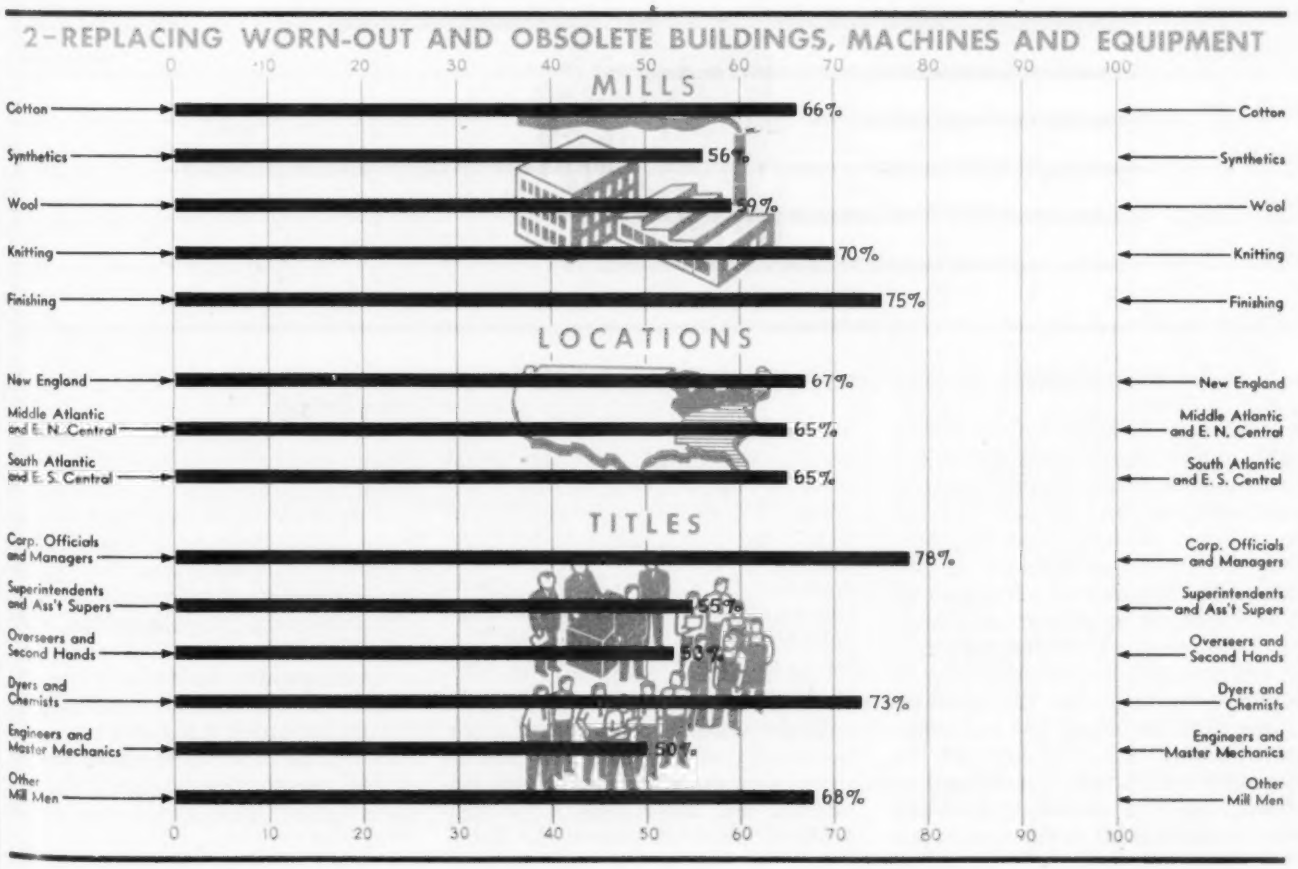
*Comments by* **STUART W. CRAMER, JR.**, *President, Cramerton Mills, Inc., Cramerton, N. C.*

Many of our war industries have completely new plants, with a varying degree of usefulness for peacetime production. In the cotton-textile industry, on the other hand, the buildings are mostly old, along with much of the machinery and equipment. In every case machinery is undergoing abnormally rapid depreciation—and obsolescence as well, in view of the currently phenomenal advances in technological progress.

To indicate how stagnant this situation has been in our industry, the available statistics show that at the beginning of 1940 there were 24,943,000 spindles in place; at the end of October, 1943, there were only 23,300,000, or a reduction of 1,643,000 spindles. Since 1940 the amount of equipment scrapped has been equal to only one-half to two-thirds of the amount scrapped in any three-year period since 1938.

During the years 1940-42 inclusive, new installations amounted to only 1,075,000 spindles, the smallest amount for any three-year period since 1928, with the exception of the depression period 1931-33. While accurate figures are not yet available, the rate of new installations during 1943 has undoubtedly been much lower still, and confined to war specialties which might not be particularly suitable for peacetime products.

From the above it is obvious what a great need there is in our cotton-textile plants for modernization. If we are to do our job properly in the postwar period, it is extremely important that the reconversion of the textile-machinery industry start as early and progress as rapidly as the war program permits, and that when new machinery becomes available our domestic mills will have first call upon it.



*Comments by* **FREDERICK O. TYLER**, *President and Treasurer, Anniston Manufacturing Co., Anniston, Ala.*

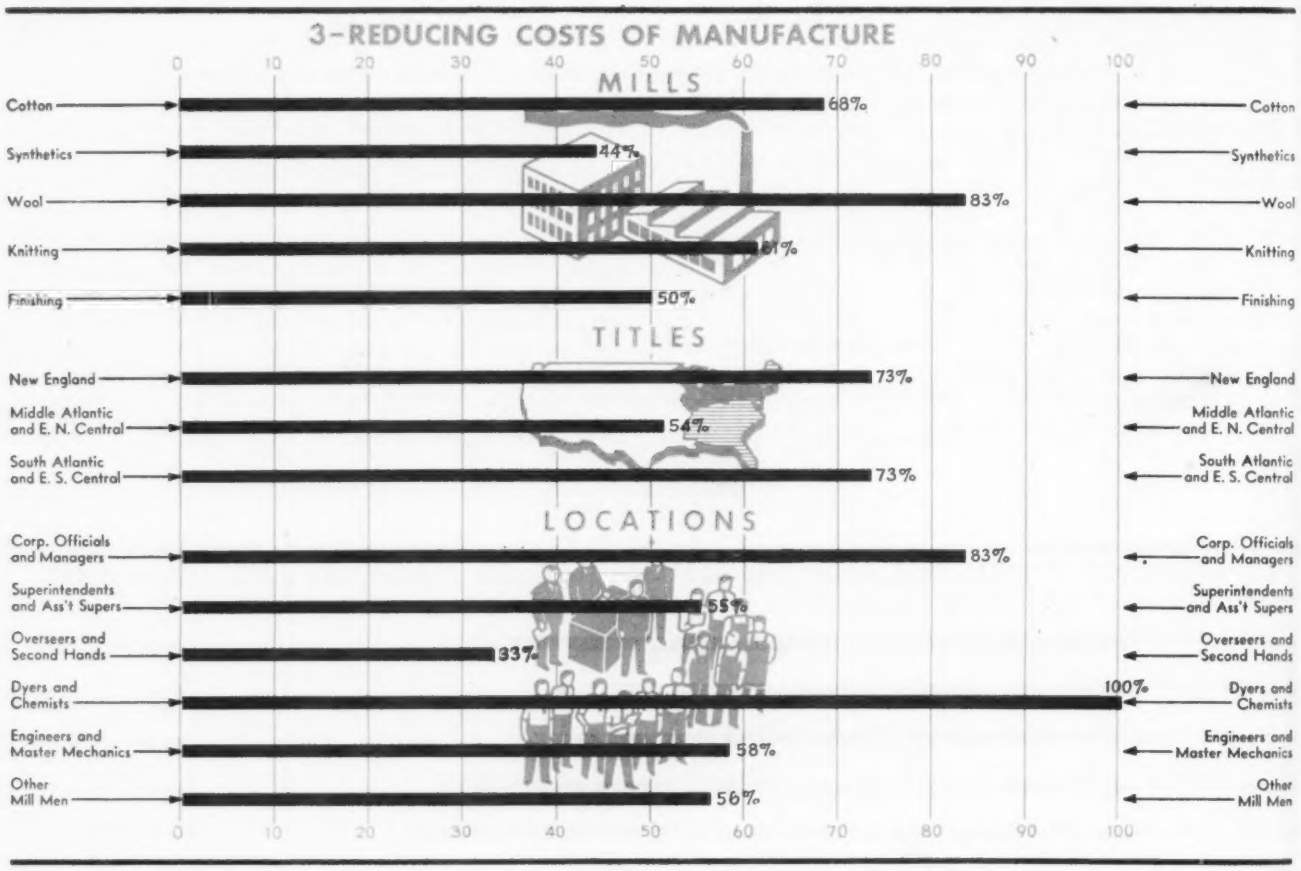
*Actual Depreciation* in terms of dollars is that amount that must be set aside annually to replace a machine when it is so worn out or obsolete that it can no longer operate profitably under average conditions. It has little to do with the bookkeeping entries required to extinguish the original investment.

No one questions seriously the average life of textile machines allowed in computations for extinguishment in normal times. They do question the amounts allowed for *actual depreciation*, when on elimination of worn-out equipment it is found that only 1000 looms or spindles can be bought with full extinguishment depreciation, when double that number go to the scrap pile.

Excess of *actual depreciation* over an extinguishment rate is treated as income and taxed. This tax is a capital levy. Furthermore, this excess *actual depreciation*, in many cases, represents so large an amount that taxes on real income begin in the 90% bracket.

Before the war, an unbalanced national budget and government restrictions so increased the price of machinery replacements that millions of spindles, and the jobs they produced, no longer exist.

Today—with accelerated depreciation due to continuous three-shift production, lack of time and skilled employees to maintain and repair machines, and inability to secure proper supplies and parts—many mills must soon stop operations. They cannot meet the more than usual necessary replacement costs, especially when these replacements must be made through plowing back profits taxed at the present rate. Either our industry and the jobs it gives will shrink, or—as seems more likely—the public will pay the high prices necessitated by use or ordinarily sub-marginal equipment.




## 3—REDUCING COSTS OF MANUFACTURE

WOOL MILLS, which include woolen mills normally operating on low profit and the worsted mills operating expensive processes, are naturally sensitive to the need for cost reduction. New England manufacturers, located in a relatively high-cost area (although it is not nearly so high in comparison as it used to be), are expectedly concerned over this problem; but it is interesting to note that the Southern states show an equal cost consciousness. Dyers and chemists are frequently tossed the job of bringing costs down, and the chemical operations they control are often the most expensive in the mill because of the costly supplies consumed. The fact that executives show a progressively lower interest in costs from managers to overseers is perhaps a situation for grave concern.

*Comments by* **DR. CLAUDIUS T. MURCHISON**, *President, The Cotton-Textile Institute, Inc., New York, N. Y.*

Under wartime conditions the cotton-textile industry has been able to absorb the tremendous increases in raw material and labor rates. The only problems involved concern the granting by the government of adequate price ceilings.

No one supposes that this nonchalance toward the problems of cost will persist when the war is over. Then it will not be a matter of being called on to supply an unlimited demand, but a question of competition. No legislation or executive action can set aside the principle of competition in a world which is at peace.

Consequently, unless material and manufacturing costs are increased in foreign countries, it is absolutely necessary that all of the elements of cost in textile manufacture be given study in order to meet whatever the competitive situations may be.

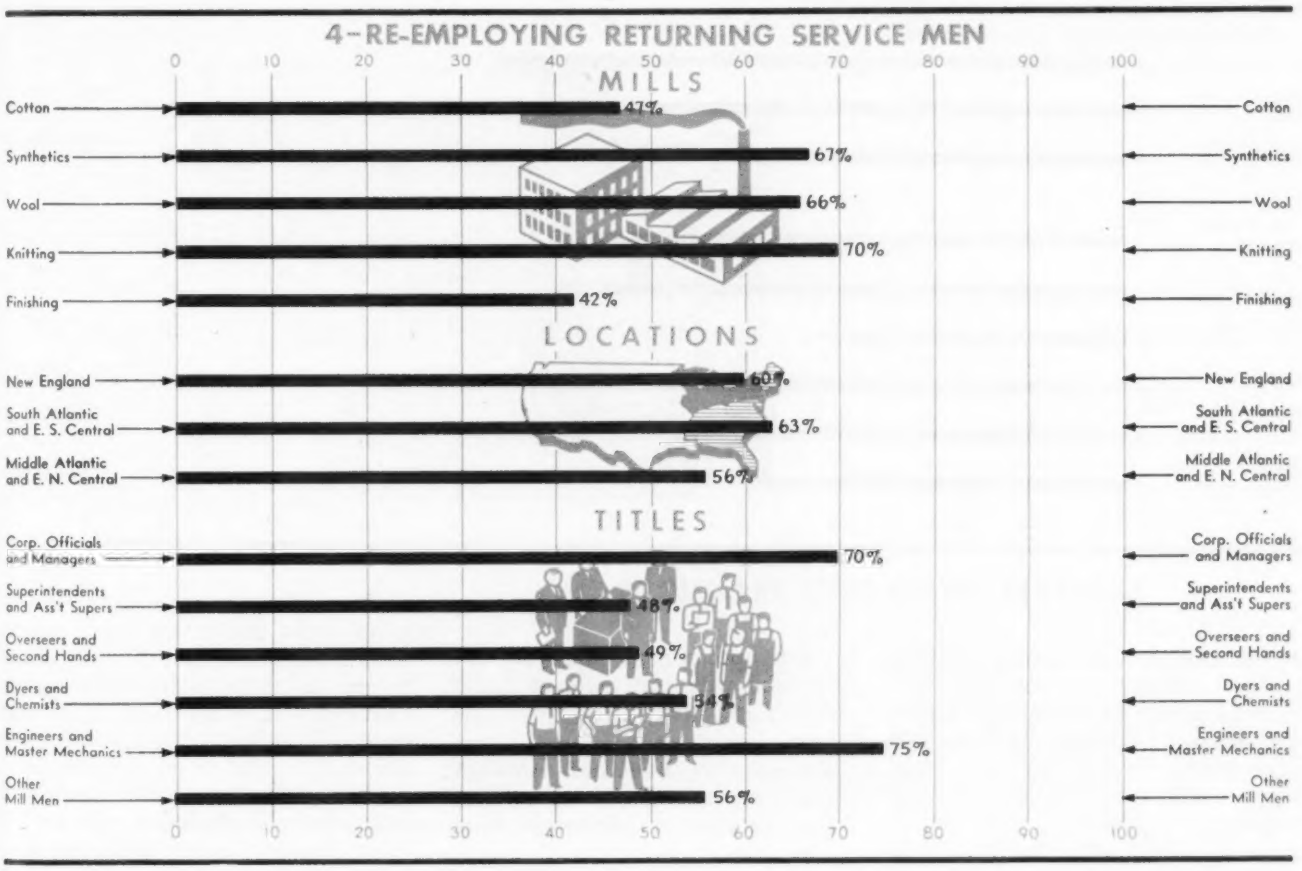
*Comments by* **J. C. PLATT**, *Agent, Chicopee Manufacturing Corporation of Georgia, Gainsville, Ga.*

Reducing costs boils down to three main items.

First, we should study the possibilities of new equipment and improvements in present installations and take advantage of any and all ideas—even radical new methods, if they will make it possible to supply high-quality merchandise to more people at a lower cost.

Second, overseers and foremen should be trained to have a management viewpoint in their department, in this way developing the habit of more serious attention to up-keep of machinery and better care towards more effective lubrication and the reduction of supply-room replacement costs. The overseer should even be concerned with the power bill, which is going a little beyond the present responsibilities of most overseers. It is his responsibility to see that machines are properly lined, leveled, and adjusted. Failure to do so adds considerably to power waste. Having the management viewpoint will incidentally go far in establishing the most desirable personal relations between the overseer and management, and will be invaluable in getting reasonable compliance with the executive ideas right down through the organization. Of course, we are speaking of the type of management definitely concerned with the welfare of employees.

Third is the idea of research and the big question of making this research of definite service to going concerns. Our research organizations should concentrate on a problem, go to the basic principles, and arrive at definite conclusions. Take, for instance, the question of twist in yarn. We have been "grasshopper researching" on this for forty years, and still have two contradictory suggestions as to how to establish the proper twist for the greatest yarn-breaking strength, whether on the angle basis or having one definite twist multiple for all counts of yarn.


4—RE-EMPLOYING RETURNING SERVICE MEN
0 10 20 30 40 50 60 70 80 90 100
MILLS
Cotton 47%
Synthetics 67%
Wool 66%
Knitting 70%
Finishing 42%
LOCATIONS
New England 60%
South Atlantic and E. S. Central 63%
Middle Atlantic and E. N. Central 56%
TITLES
Corp. Officials and Managers 70%
Superintendents and Ass't Supers 48%
Overseers and Second Hands 49%
Dyers and Chemists 54%
Engineers and Master Mechanics 75%
Other Mill Men 56%
0 10 20 30 40 50 60 70 80 90 100

## 4—RE-EMPLOYING RETURNING SERVICE MEN

Cotton mills, which on the average are large employers and so have many jobs to be filled, seem relatively well prepared to reabsorb their returning employees. The low vote of finishers may simply indicate that these plants have more urgent postwar problems facing them. Top officials obviously recognize that they have this problem right in their laps. Engineering staffs, composed entirely of men, have suffered heavily in supplying members to the armed services. The problem is an important one, but the reason it rated so surprisingly high in the overall vote, as recorded in the general chart, may be that some voters were expressing themselves on the subject of postwar employment in general.

*Comments by* **J. J. SCOTT**, *President, Scottdale Mills, Scottdale, Ga.*

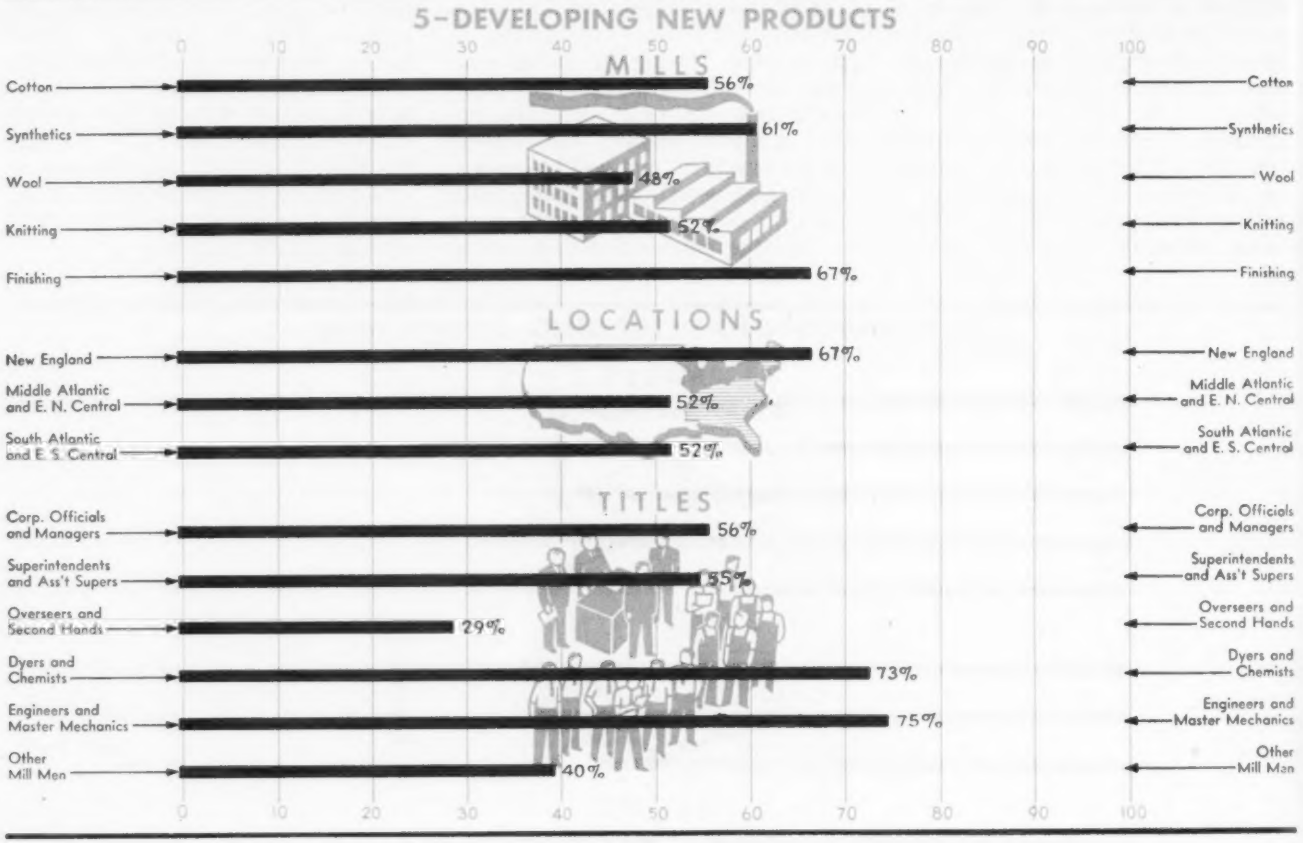
Rehiring former employees returning from the service presents a problem to which we in the textile industry should give earnest and serious consideration. It is legally required of us that these men and women be given employment; it is a particular duty expected of us; and it is a duty that we shall be happy to fulfill.

When the boys who have fought for us have returned home, we shall be faced with the situation of having many trained employees available for the same job. One of these, perhaps, will have commuted from a rural district to help out in the emergency; another may have had his own home in the vicinity; one may have lived in the village and for many years been a dependable employee; another may be the sole support of a large family; and another, due to being an essential employee, may have been deferred and served in the war effort at home. In a case like this, some study should be given to individuals involved, and a kind of priority worked out based on necessity of work, skill, absentee

record, length of service, and similar facts, so that, if releases are necessary, injustices will not occur.

It is high time to begin to study this problem toward making plans, but any plans adopted should be flexible enough to meet conditions as they might obtain when hostilities cease, because market conditions and other circumstances will have some bearing in determining the final procedure.

Textile mills can be counted on to face cheerfully their obligations to the returning service men and women, at the same time being very conscious of their obligations to those who have rendered faithful service at home during the emergency.




## 5—DEVELOPING NEW PRODUCTS

THE INTEREST of finishing plants in new products parallels their attitude in regard to replacing worn-out and obsolete buildings, machines, and equipment. Possibly the new fabric finishes, such as new methods of waterproofing, creaseproofing, mildewproofing, etc., exert an influence. It is natural that synthetics should also rate this item highly. New England, which is associated with fine style goods and which has long suffered from severe competition in staples, is, as expected, interested in new fabrics. On this subject the dyers and chemists concur with the finishers, and the chemists are no doubt influenced by their strong interest in research.

Engineers expect to have a big part in the developing of new products, more than managers and superintendents; and it is true that they are frequently the ones to be called in first for the development of the new equipment necessary for new products. Overseers and second hands seem to feel that their possible contribution is small—unfortunately, since many new, if not spectacular, products have originated with this group and with their subordinates.

*Comments by* **ROBERT AMORY**, *President and Treasurer, Nashua Manufacturing Co., Nashua, N. H.*

The Philadelphia Quartermaster, U. S. Army, has proved that a number of layers of thin fabric are more comfortable to wear, and really warmer, than one very thick fabric. They have learned what we blanket manufacturers have always known—that warmth is due to the insulating properties of air, and the construction of the fabric, rather than to the fiber out of which it is made. The Army has evolved from these theories and from the practical experience of skiers in snow countries that the best garment for warmth is wool next to the skin to keep the moisture away from the body, then a fairly heavy-weight cotton garment for wear and washability. The new Army overcoats are made of a waterproofed, closely-woven cotton outside, with a thick, resilient lining, usually mohair plush, and a thin cotton lining inside. I do not prophesy that civilians in the future will wear heavy wool underclothing, but I do think these new ideas will help to break down prejudices.

From this brief sketch we should learn that the consumer will in the future be more interested in the serviceability of the fabric or garment. Textiles will be more beautiful than ever but more suited to their purpose, more ingeniously and scientifically constructed. The fabrics will be built of many fibers.

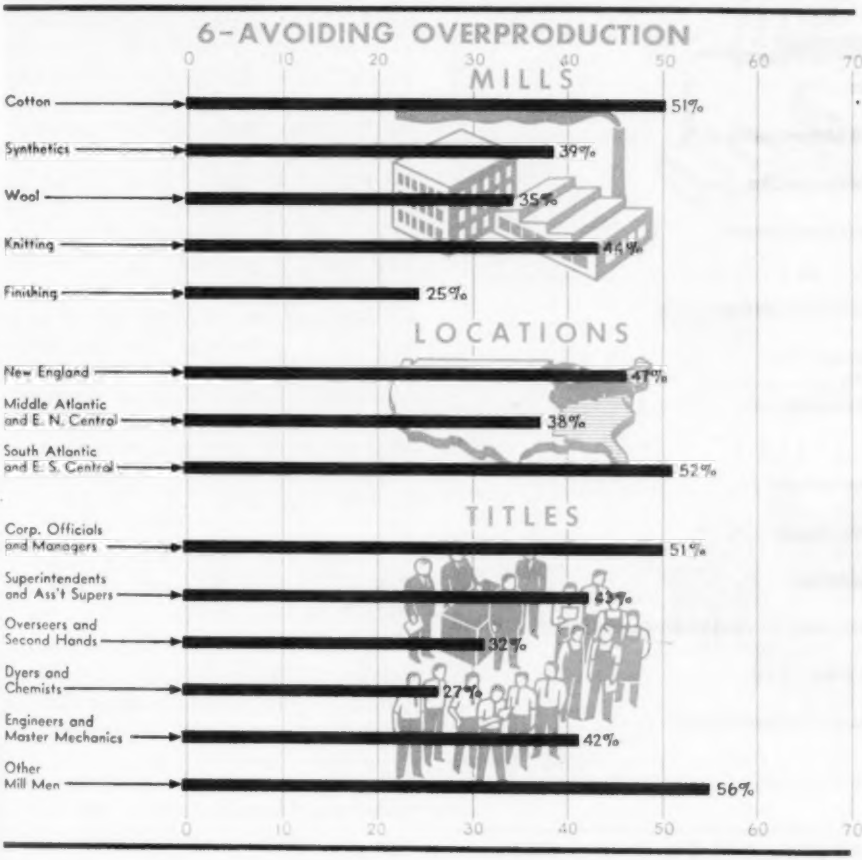
***Abstracted, with permission, from address before National Retail Dry Goods Association.***

*Comments by* **H. BOEDDINGHAUS**, *Vice President, American Felt Co., Glenville, Conn.*

Studies of non-woven wool-felt characteristics and properties are being conducted constantly by the industry's engineering and research staffs, and should develop a constant flow of technical data to provide information regarding felt applications of every description. The industry faces the post-

war era in a rather enviable position, as advances made during the past five years toward standardization of felt qualities and test methods have gone far to provide the proper materials for a great many specified end uses.

The industry is faced primarily with problems of production, necessitating improvements in facilities and processes. The manufacture of wool felt still remains a craftsman's art, and requires inordinate skill in the blending of textile fibers and in the manipulation of the material through to its finished state. The line production methods of other industries are still not within the realm of possibility at this time for felt manufacturers.




## 6—AVOIDING OVERPRODUCTION

COTTON MILLS evidence the greatest concern with respect to overproduction. This is understandable in view of their past history and the many obsolete spindles standing before the war started. Finishing plants appear to be least alarmed about overproduction. Southern states reflect the view of the cotton plants to within 1%, but New England plants are only slightly less perturbed. Just why "other mill men" should fear overproduction most is not evident from the chart, but an analysis of the individual returns shows that this vote was influenced greatly by stylists and other personnel closely connected with sales.

*Comments by* **RUSSELL T. FISHER**, *President, National Association of Cotton Manufacturers, Boston, Mass.*

Under the urge of wartime necessity, the cotton-textile industry produced nearly 12½ billion square yards of cloth in 1942, or some three billion square yards more than in any previous year. While it is unlikely that, without the spur of the war, equal production could be obtained in a normal year, this possible total should be kept in mind in gaging postwar activity. There will presumably be a short period when everything produced can be sold, while the public is catching up on its deferred needs. Beyond that point the industry faces a serious problem in method of operation. At this time it is impossible to forecast even an approximation of the probable postwar demand for cotton goods. Whether the many new synthetics that will be available will find markets in addition to those normally supplied by cotton, or whether the use of cotton will tend to be curtailed, is not known. In any event, it seems unlikely that the country will consume the production that could be obtained through three-shift operation.

With approximately 23 million spindles active, the potential production of three shifts would be in excess of even the 1942 production. Apparently about 25% of the spindles cannot be operated more than two shifts, because of state legislation or other causes. With 25% of the spindles on two shifts, and 75% on three shifts, potential production would be considerably in excess of the 1942 production. It seems evident that either a large part of the industry must operate on the basis of not more than two shifts, or the industry as a whole will face another period of liquidation of excess capacity. Experience has demonstrated that this is a long-drawn-out process, and costly even to those mills that survive.

The Sherman Antitrust Law successfully prevents control through agreement; but if the industry is to escape the evils of overproduction, some sort of voluntary control must be exercised.

## 7—MEETING BURDENSOME TAXATION

IN GENERAL, THIS CHART shows a uniformity of feeling with respect to the importance of taxation as a postwar problem, as might reasonably be expected—with only two classes appreciably below the average and two above.

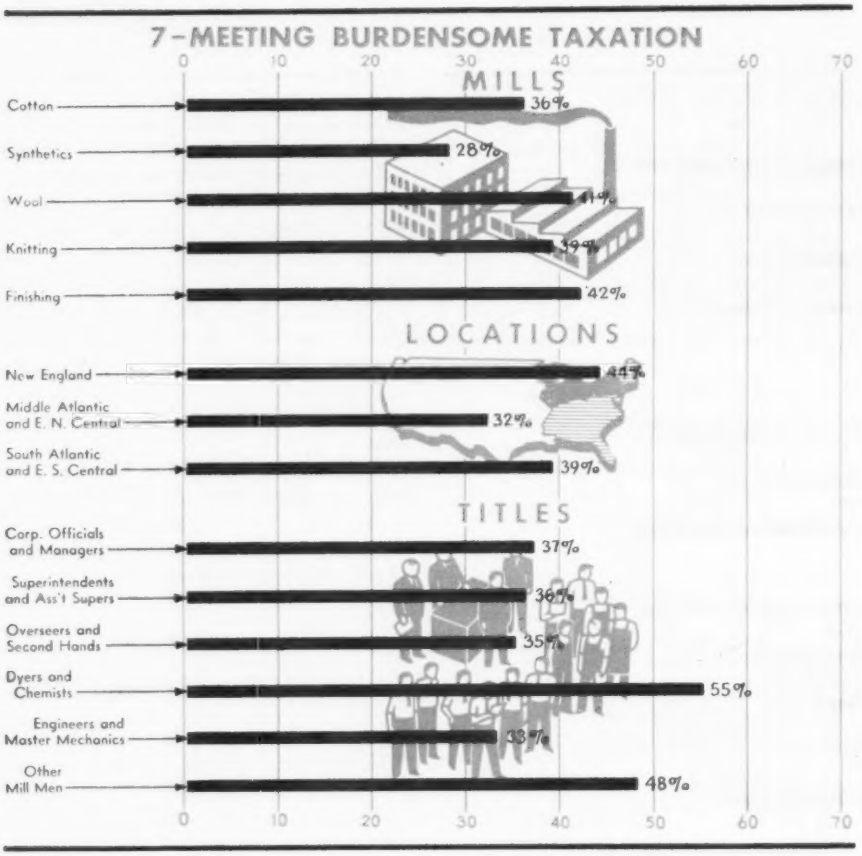
*Comments by* **ROY A. CHENEY**, *President, Underwear Institute, New York, N. Y.*

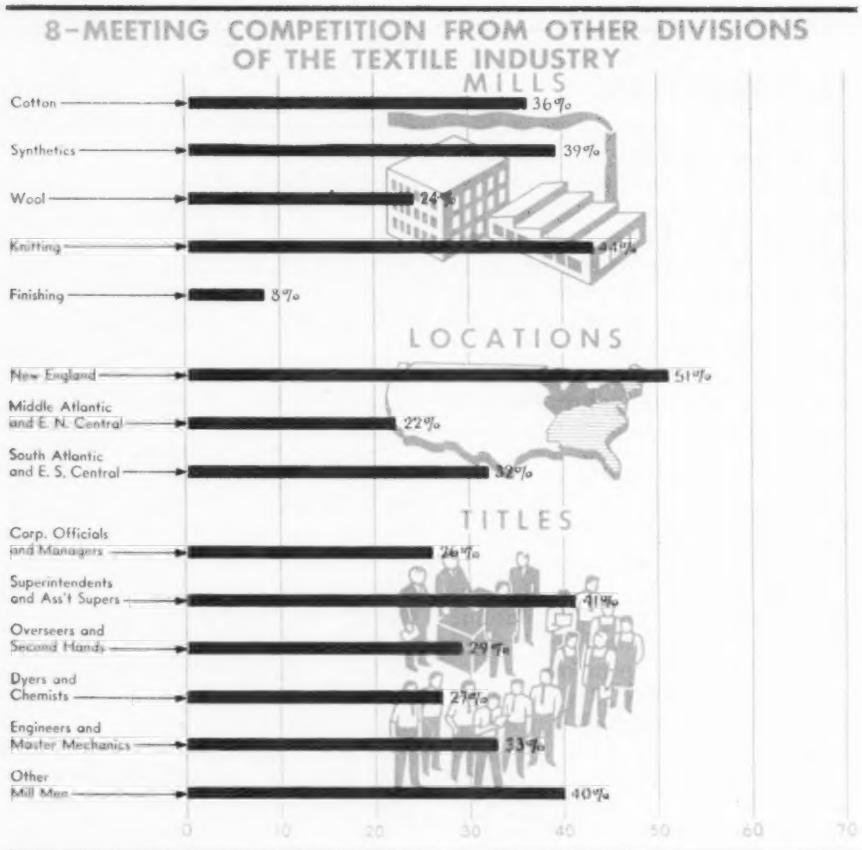
Industry cannot survive if the present tax policy is continued into the reconversion period and the subsequent period of establishing a sound domestic economy. Industry must be allowed to accumulate reserves for the postwar period. It takes money to reconvert a mill and to recapture sufficient domestic business to operate after the boom is over.

Industry has performed miracles during the war and can do it again, but the government will have to allow it the freedom required to meet its postwar problems. The budget should be balanced, the payment of the war debt spread over a long period, government expenditures drastically reduced, unnecessary restrictions on industry lifted, federal bureaus and employees sifted and reduced to a minimum.

The administration of this huge debt after the war will require competent and courageous leaders. Because of its size any change in this debt, up or down, will quickly influence indus-

trial activity, and taxation will be the control of the debt and of production. Industry can meet future taxes if the government governs wisely and the necessary controls over our economy are properly administered and unnecessary controls eliminated. We must have leaders with vision and ability.




## 8—MEETING COMPETITION FROM OTHER DIVISIONS OF THE INDUSTRY

CHART 8 SEEMS TO REFLECT the feelings of individual types of mills less from the angle of the competition they are going to meet than from that which they are going to give. How else can one explain the high concern of the synthetics mills, which threaten all others, or the relatively small concern of the wool mills, some of which are themselves threatened by cotton processes? The high vote of the knitting mills is probably based on the growing competition between types of knitting and also on the threat of warp knitting to weaving. New England's high vote is undoubtedly based less on fibers and processes than on geography and a vivid recollection of the migration period in the history of cotton manufacture. Why is top management so little concerned?

*Comments by* **LEO WOLFF,** *Treasurer, Terhune, Yereance & Wolff, Inc., New York, N. Y.*

In our company, we believe the development of fabrics made with worsted and rayon is so important that we have started a separate department for it.

In this new field there are unsolved questions. Among them is the finishing of blended fabrics, particularly when the percentage of worsted used is over 25%, as regular cotton finishing destroys the worsted handle and there is not enough worsted finishing machinery or finishing ability available. There are many dyeing troubles which are new with these fabrics, particularly when pattern decorations of still another fiber are used. In better grades, and in the style end of this development, the demand is for finished goods practically ready for the needle.

Price questions will again assume importance. Today the price of worsted top is approximately $1.27. Rayon top is about 38¢. How much of this difference will remain when wool seeks its natural after-the-war level? Will the synthetic-fiber producers meet a competitive-price situation when they will still have a growing demand for their product? How far will the developments of synthetic fibers influence fabrics by the introduction of crinkly fibers or hollow fibers or undulating yarn?

These worsted and synthetic fabrics will grow in use for sport shirts, for dresses, for men's summer slacks, for bathrobes. In the men's-wear tropical-suit field, the development is an open

question, though a large amount is already being cut. Up to this time, for men's-wear, the all-worsted tropical stands the rough and tumble of average wear, and is wearable for two or three years. Some of the new fabrics are not.

Nevertheless, there are probably 50,000 lb. of wool tops each week being combined with rayon, and going to cotton mills, worsted mills, and the one or two mills that are already specializing in this development.

## 9—COMPLYING WITH GOVERNMENT REGULATIONS

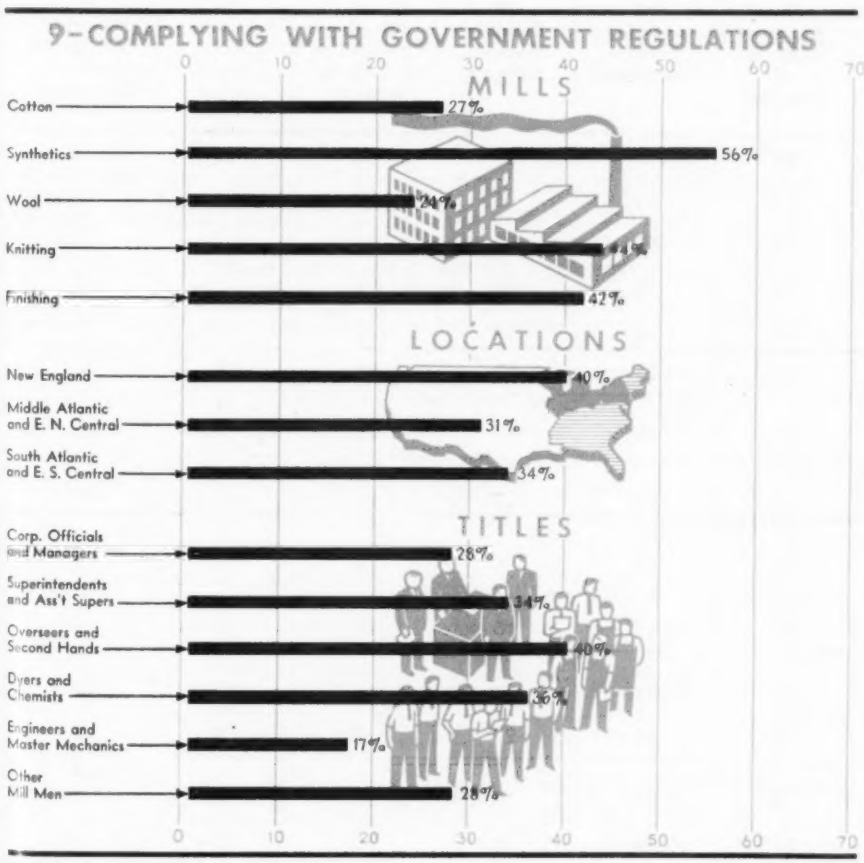
THE EXCEPTIONAL INTEREST shown in Government regulations by men in synthetics mills—and to a degree supported by those in knitting and finishing plants—may arise from the wartime allocations and controls currently exercised. Overseers and second hands have intimate knowledge of current conflicting regulations on employees—hence, perhaps, their response to this portion of the questionnaire. It is difficult to predict what controls the industry will face in the postwar era, but the experience of one important division in 1943, as described by Mr. Constantine in the following, sheds some light on the extent to which Government and industry are linked at this date. The link will never be completely severed.

*Comments by* **EARL CONSTANTINE,** *President, National Association of Hosiery Manufacturers, New York.*

On May 15, 1943, WPB put into effect General Limitation Order L-274, the purpose of which was to simplify the construction practices of the industry and to set up minimum construction requirements intended to assure a minimum useful life to the product produced. This order was developed with continuing conferences with this association and the committees which it had appointed for the purpose. The result was that the order was generally accepted by the industry as a practical one, and compliance was speedy.

The most disturbing problem of the industry during 1943 was the issuance by the Office of Price Administration of MPR-339 which imposed dollars-and-cents ceiling prices on women's rayon hosiery. The leaders of the industry and its members generally realized the need for removing women's rayon hosiery from control by the General Maximum Price Regulation and placing it under uniform dollars-and-cents ceilings, but the regulation issued possessed many glaring faults. Efforts were made by representatives of the industry to secure necessary amendments to overcome the faults. Failing in this, we were reluctantly compelled to take our case before Congressional public hearings. The facts brought out in such testimony contributed more than anything else to the general exodus of professors out of OPA and the setting up of the present administration, whose performance is now capturing public support. A new draft of MPR-339 went into effect on January 15, 1944. This draft was evolved with the cooperation of the industry; and, as a result, we have an order which is generally looked upon by both the industry and the market as being a satisfactory one. The new order recognizes the established methods of merchandising, does away with the grading of the product, recognizes the standards of construction previously imposed by WPB, and provides a differential on the branded product to an extent calculated to cover the additional costs of distribution which apply to such product.

The production of children's and infants' hosiery has steadily decreased during the last year due to price, materials, and manpower difficulties. Within the last three months steps have been taken by the Office of Civilian Requirements of WPB to induce an improvement in this situation. The concern of OPA has also been aroused, and further reliefs are in the offing. We anticipate that by the spring of this year the shortages will have been overcome. A somewhat similar situation has been developing on work socks, and steps are being taken to correct this situation as well.




## 10—RECONVERTING TO CIVILIAN PRODUCTION

COLUMN 10 IN THE TABLE on the following page shows the percentage of voters in each classification who considered reconversion a major problem.

This vote indicates that cotton mills have the greatest reconversion problem; wool mills and knitting mills, the least. Logically, therefore, the southern states show the most concern. Engineers, master mechanics, overseers, and second hands recognize that the work of mechanical reconversion will be largely theirs.

*Comments by* **F. W. SYMMES,** *President, Union-Buffalo Mills, Greenville, S. C.*

Many people think that the textile industry had little to do in adapting itself to war needs and that therefore it can shift back into civilian production with the greatest of ease. Perhaps a few statements will indicate some of the problems.

Money is the blood which circulates through the industrial system, enabling it to change, give employment, and live

a normal, natural life. Renegotiation, contract termination, and taxes of all kinds are the unknown factors that hover over the treasury of industry, giving to it an uncertain feeling as to how much will be left and what can be done with it.

The industry faces civilian production with machinery worn and in worse condition than it has been for some time, at least since the competitions of quality and price became so dominant. Replacements and repairs will be determined by ability to spend, ability to secure.

The recasting of work schedules, the rebuilding of patterns and designs, the hunt for the customers that have been cast aside in this war emergency, the finding out about their desires as to patterns and weaves, the rebuilding of the labor force made necessary by demobilization and the many personnel changes involved, the political situation, the labor situation, the terms of the peace treaty (which will involve international trade, in which cotton and cotton textiles will be heavily involved), the rapid rise of synthetics and their impact upon the public—these and many more problems complicate reconversion.

## 11—MEETING PROBLEMS OF INFLATION

THE BREAKDOWN OF VOTES on problems 10 through 16 are given in the table below, wherein the figures show percentages of voters in various classifications who considered each problem important.

The concern of knitters and finishers over the inflation problem may arise from their relatively close position to the consumer. Corporation officials are largely specialists in financial matters. Overseers and second hands have already seen inflation narrowing the differential between their wages and those of the people under them.

*Comments by* **ALFRED A. FORSTER,** *Vice President, Clifton Yarn Mills, Inc., Clifton Heights, Pa.*

Inflation is a subject of great magnitude and complexity. History tells of many inflations, and the German and French inflations of the years following World War I are recent lessons. Yet, neither of these inflations can be compared with the one in the making.

Problems of inflation in postwar days must be met today, not after the war. The country feels that the tax burden is great, but I am afraid that we shall have to learn to pay much higher taxes—sacrifice until it hurts. By "we," I mean everyone, including the tens of millions of war workers. Runaway inflation will hurt more than the parting with tax and bond dollars. Therefore, all money we furnish for bonds and loans should be offered free of interest, and the interest on all previously loaned money should be abolished. Why borrow money to pay interest on borrowed money and pay higher taxes in support of this vicious circle? We should consider ourselves lucky if part of the principal is saved in years to come.

Liquidate the Office of Price Administration and the National War Labor Board, and let Congress set up one agency to handle and rigidly enforce price ceilings and wage-and-hour laws. Such an agency should have the courage to tell the nation, if necessary, that a 40-hour work week should be replaced by 54 hours at present pay.

If determined to avert catastrophe and chaos, we must learn to sacrifice now, as it will be too late to think of meeting problems of inflation in postwar days.

### BREAKDOWN OF VOTE ON PROBLEMS 10 THROUGH 16

| | Classification of Voters Each figure in other columns shows percentage of total voters in each class who consider the problem of major importance | 10 Reconverting Mill to Civilian Production | 11 Meeting Problems of Inflation | 12 Meeting Foreign Competition | 13 Building Export Markets | 14 Meeting Competition from Other Industries | 15 Rebuilding Sales Organization | 16 Financing Company's Postwar Operations |
|---|---|---|---|---|---|---|---|---|
| MILLS | Cotton | 36 | 24 | 24 | 19 | 22 | 12 | 8 |
| | Synthetics | 22 | 17 | 22 | 6 | 22 | 11 | 11 |
| | Wool | 10 | 7 | 28 | 21 | 10 | 7 | 7 |
| | Knitting | 9 | 48 | 35 | 35 | 9 | 13 | 22 |
| | Finishing | 25 | 33 | 8 | 25 | 33 | 0 | 8 |
| LOCATIONS | New England | 24 | 22 | 27 | 29 | 24 | 9 | 7 |
| | Middle Atlantic & N. E. Central | 26 | 28 | 19 | 18 | 12 | 19 | 15 |
| | South Atlantic & S. E. Central | 31 | 23 | 27 | 19 | 21 | 11 | 9 |
| TITLES | Corp. Officials & Managers | 23 | 33 | 25 | 25 | 14 | 25 | 11 |
| | Superintendents & Asst. Supts. | 25 | 11 | 27 | 16 | 14 | 7 | 7 |
| | Overseers & Second Hands | 36 | 33 | 11 | 24 | 24 | 18 | 16 |
| | Dyers & Chemists | 18 | 18 | 45 | 27 | 9 | 9 | 18 |
| | Engineers & Master Mechanics | 42 | 8 | 33 | 17 | 33 | 0 | 0 |
| | Other Mill Men | 24 | 24 | 24 | 16 | 16 | 0 | 12 |

## 12—MEETING FOREIGN COMPETITION

COUPLING THE INFORMATION in columns 12 and 13 shows that knitters are interested not only in meeting foreign competition here, but also in developing world markets. Wool mills have long been concerned over foreign competition. Dyers and chemists are no doubt thoroughly conscious of the historically important part which Europeans have played in chemical progress.

*Comments by* **SYLVAN I. STROOCK**, *President, S. Stroock & Co., Inc., New York, N. Y.*

The postwar future of the American wool-textile industry depends (a) upon the postwar tariff policy of the United States Government and (*b*) upon intelligent unity of action by wool growers and wool-textile manufacturers.

*Tariff.* American costs of raw materials, labor, and all other elements of production are at least 50% higher than parallel costs in any other country in the world. These added costs of maintaining the American standards of living have been made possible only by the American protective-tariff system. If we are afforded adequate protection in the postwar period, our industry faces a brilliant future. If the present inequalities of existing reciprocity treaties are continued, or if the theory of the protective tariff is abandoned, our industry will undoubtedly deteriorate swiftly. This country will, in this event, become dependent upon foreign sources for its woolen textiles.

*United Industry Action.* This war has proved to the civilian public, and to fifteen million young men and women now in service, that wool is the peer of all apparel fibers. The threat of competition from existing synthetic fibers has been greatly minimized. The people of America want wool. Man may some day discover an adequate replacement for wool. He has not yet done so. Therefore, the wool-growing and wool-textile industries, by intelligent joint action, can solve their internal problems of production and distribution. Mechanically our industry is in excellent condition. We have modernized our equipment and processes. Our styling equals that of manufacturers anywhere else in the world. Only the Government of the United States, however, can protect us against destructive, lower-cost foreign competition. With this safeguard, the industry, through intelligent unity of action, can and should develop a program to increase markets by sound research, education, and promotion.

## 13—BUILDING EXPORT MARKETS

THE VOTE ON EXPORT MARKETS no doubt reflects a mixture of hope and pessimism, and some analysis of opportunities. It appears that knitting mills are going to go after export markets most aggressively. New England is traditionally export minded.

*Comments by* **WILLIAM C. PLANZ**, *President, Textile Export Association of the United States, New York, N. Y.*

Over the next six months, the American textile industry will be given an opportunity to decide whether or not it wishes to play a prominent role in world markets. Under WPB Revised Order M-317, about 800,000,000 yd. of cotton textiles are set aside for distribution to foreign outlets through lend-lease, relief and rehabilitation, and regular commercial channels. The future of our textile export business rests on the willingness of mills to fulfill the provisions of this order, the skill with which exporters distribute the quantities made available to them, and the policies adopted by those charged with the disposal of lend-lease and relief shipments.

Fortunately, the industry numbers among its members many exporters who have devoted their entire business lives to studying the requirements of foreign markets and mastering the intricate mechanism of foreign trade. In the face of untold difficulties, they have managed to build up distributive organizations that have established strong outlets for American textiles despite severe competition from low-wage nations. These exporters can be depended upon to handle the goods allocated to them in a way that will prove of lasting benefit to the industry. It is they who will cushion the effects of the industry's transition from a wartime to a peacetime economy.

## 14—MEETING COMPETITION FROM OTHER INDUSTRIES

THE RELATIVE EASE with which highly finished fabrics (shower curtains, imitation leather, etc) are simulated with other materials may be the basis for the attitude of finishing plants toward other industries. Cotton and synthetics mills supply the fabrics from which these items are produced, as well as fabrics which must compete with paper—including window curtains, table cloths, napkins, towels, etc.

*Comments by* **OSCAR JOHNSTON**, *President, National Cotton Council, Memphis, Tenn.*

The time has not yet come for relaxation or reduction in the intensity of our war effort. Yet the time is definitely upon us for serious and considered appraisal of the grave problems which await us beyond the horizons.

Already the pattern of our problems is set. Already the forces which will seek to envelop our markets are plainly visible—wood pulp and jute from below, new and super-synthetic fibers from above, low-cost foreign growths of cotton from all sides. Already the tactics of our opponents are plain—infiltration at first, then consolidation, then exclusion. Already their weapons are known and understood—intensive and untiring research, aggressive and voluminous sales promotion measured in millions of dollars.

The genuine answer to these threats is not government subsidies in any of their myriad forms. These at times may be indispensable as temporary expedients; yet in the long run they are palliatives, not cures. Cotton's answer—its indispensable answer—is to meet its adversaries on the battleground they seek to capture, the battleground of markets, and defeat them with those same modern and effective weapons.

## 15—REBUILDING SALES ORGANIZATION

ALTHOUGH 25% OF THE CORPORATION officials and managers expressed themselves as concerned over the problem of rebuilding their sales organizations, this topic rated relatively low in the overall vote. Either the industry has maintained its sales organizations fairly intact or, as has often been suspected, it is complacent and disinterested with respect to sales matters. On the latter possibility, Royal Little, who has lately pioneered in the building of a new type of sales organization, has something important to say in his comments, which follow.

*Comments by* **ROYAL LITTLE**, *President, Atlantic Rayon Corporation, Providence, R. I.*

It may surprise you to learn that you can count on the fingers of one hand every large textile manufacturer who has averaged for the past decade 10% earnings on net worth. Most of the biggest names in the industry have made less than 5% annually for this

period, while at the same time in other fields many manufacturers have averaged over 15% on total investment. Small wonder so many ask, "What's the matter with the Textile Industry?"

As a result of analyzing balance sheets, profit and loss statements, and operating methods of hundreds of companies in many lines, we have concluded that there is one outstanding cause for textile's plight.

On the whole, owners and management of textile enterprises have paid too little attention to merchandising and selling their products. We have devoted most of our time and effort to production problems and have turned sales over to someone else. As a result we have no control of output continuity or of product pricing. Most of us have established no permanent demand for our products with the ultimate consumer. We have consequently during periods of bad business suffered more acutely than other industries from the double-barreled effect of less volume and lower prices. In our own company we have striven for years like many others to achieve some degree of stability for our enterprise, but to date we are still dissatisfied with results. Therefore, we now plan through our wholly-owned subsidiary, Textron, Inc., to develop, advertise, and distribute a varied line of quality consumer products made primarily from synthetics direct to the nation's leading retail stores. Research will play a most important role in the development of these products worthy of carrying the Textron name. Five years from now, if our program is successful, we shall have distribution through the finest retail stores, we shall be fully integrated "From the Yarn to You", "Textron" will be a household word.

## 16—FINANCING POSTWAR OPERATIONS

As with sales organizations, persons queried who were directly interested in the financing problem were comparatively few. The table indicates that those men most concerned were in the knitting mills of the Middle Atlantic states.

*Comments by* **ELLIOTT H. LEE**, *Vice President, Guaranty Trust Co., New York, N. Y.*

Textiles will face the restoration of normal inventory and receivable positions, perhaps the need to finance temporarily enlarged foreign sales and the return of periods of sharply fluctuating price levels. Unspent depreciation accruals will eventually have to be devoted to the purposes for which set aside. Severe taxation of wartime earnings has often left little enough reserved to replace the serious drain of peak production, so that access to current and investment funds will be important to maintain.

A strong and liquid financial position will be imperative in the postwar market when the demands of new raw materials, new uses of old materials, new and better machines and processes, and the replacement of rundown equipment will very likely recreate a highly competitive situation, reviving in that respect a strong pre-war trend. Keenness, versatility, and careful approach to these problems appear likely to be the hallmarks of management. Where such are evident, adequate bank credit at fair rates for current purposes will undoubtedly be available despite the burdens of government wartime requirements banks have had to assume. These same qualities of management will, without a doubt, open the door to the longer-term investment market as well.

Divided for the most part into moderately-sized, highly-competitive units operating in a field strikingly responsive to the short-term swings of the business cycle, the textile industry derives as much benefit as any from the closest commercial and investment banking contacts. An insight into the methods, resourcefulness, and capabilities of plant management will be more important than ever to those who sponsor such offerings to the public and are called upon to evaluate prospects, and to determine a reasonable balance between borrowed and risk capital.

## CONTRIBUTORS TO TEXTILE WORLD'S SYMPOSIUM ON POSTWAR PROBLEMS

**Here are pictures of many of the men who contributed to the preceding feature of our Annual Review & Forecast Number. Others were Leo Wolff, Royal Little, Alfred A. Forster, and W. C. Planz.**

W. M. McLaurine

Glenn Gardiner

Stuart W. Cramer, Jr.

Frederick O. Tyler

Dr. C. T. Murchison

J. C. Platt

J. J. Scott

Robert Amory

H. Boeddinghaus

Russell T. Fisher

Roy A. Cheney

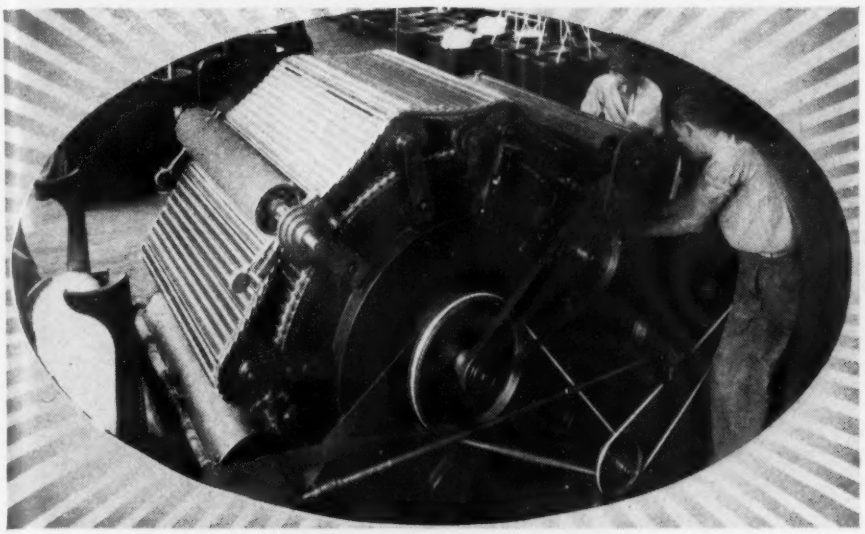
Earl Constantine

F. W. Symmes

Sylvan L. Strouck

Oscar Johnston

Elliott H. Lee



# 1943—Notable for Vigorous Attacks on PRODUCTION PROBLEMS

**HIGHLIGHTS:** Steps Taken to Combat Manpower Shortage — Progress in Development of Military Fabrics — Improved Processes and Equipment — Wartime Maintenance Programs — Plans for Extensive Research.

FOR THE TEXTILE INDUSTRY, the second year of the war was a constant series of battles against shortages of manpower, machinery, and materials. By making vigorous attacks on every production problem which arose, the industry was able to keep unblemished its record for meeting the demands for its products by our armed forces. Whereas in the past operating executives were concerned chiefly with improving techniques, raising quality of products, and lowering costs, they found it necessary in 1943 to devote a major part of their attention to training of new workers, utilizing women on jobs formerly held by men, improving working conditions, and other personnel problems.

Despite the many obstacles which had to be overcome, the industry made considerable progress in development of new and improved techniques for production of textiles for military and essential civilian purposes. Likewise, in cooperation with the various procurement agencies, it worked out several new fabrics and special finishes. Maintenance programs were geared to wartime conditions. Increasing appreciation of the necessity for and value of research led to the formulation of far-reaching plans for the carrying out of both fundamental and applied research on a broad scale. Although manufacture and sales of textile machinery were severely restricted, several new processes were introduced and some new types of equipment announced.

From the following more detailed review of the major developments of 1943, it will be noted that the necessities of war prompted many of the changes which took place. But it will be evident also that most of the improvements in equipment and production methods are applicable or adaptable to peacetime needs.

## PERSONNEL PROBLEMS

*Scarcity of skilled employees and the disappearance of any backlog of employable men and women during 1943 caused a definite shift in attention from products and techniques to personnel problems. Accordingly, superintendents, overseers, and other executives found it necessary to devote a major part of their efforts to making the labor force more efficient.*

**TRAINING METHODS.** Practically every mill in the country had to step up its program for training new workers and upgrading other employees. In doing this, many companies made use of State and national vocational training facilities. One of the more important aids has been the Training-Within-Industry program, initiated by the WPB and now being conducted by WMC. A part of the program which many mills adopted is the Job Instruc-

*Diverse problems are considered at meeting of Labor-Management Committee at Avondale Mills.*

tor Training Service. The first companies to use these new training methods reported good results. Now more and more textile workers are being trained by TWI methods; and they are being trained much more rapidly than by the methods formerly employed in most plants.

A comprehensive plan for training new employees quickly and for upgrading experienced workers to more responsible positions was developed by WMC in cooperation with one of the larger southern textile mills. Essential features of the program include: (1) use of manning tables and replacement schedules, (2) training job instructors, (3) working out progression charts, (4) drawing up operation sheets for each job, (5) training new employees, and (6) training maintenance men and loomfixers. In setting up the plan, management and supervisory personnel of the plant met with representatives of WMC's Apprentice and Training Service and exchanged information that contributed greatly to the development and execution of the training procedures adopted. The survey included considerations of labor and production requirements.

Emphasis was put on developing job instructors, as this was considered the greatest need of the plant. A training supervisor was appointed to coordinate all training. To provide him with first-hand information, a general training advisory council was formed of management representatives, instructors, and various departmental supervisors. Training records and grading methods were established to serve as a part of the permanent personnel departmental file on trainees. Recommendations were made also to provide more orderly withdrawal of workers into military service.

The first step in the survey was to determine those jobs in the plant where the need of replacement was greatest and to select the jobs which are best for beginning practice and skills. An analysis was made of production in relation to the setting up of the plant training program. To facilitate planning, work stations were diagrammed and a job assigned to each station. A staff of instructors was trained by TWI methods, and later this training was spread to many employees throughout the plant. Special attention was given by instructors to the introduction of new trainees to the job. Job-progression charts were made to show sequence of job difficulty.

Upgrading of workers to higher-skilled jobs as they became available was planned and jobs were arranged in their order or progression on a chart. Also, training time tables were set up to give advance information to the production departments on the approximate date trainees would be available for full service. Job descriptions were prepared, which were comprehensive enough to define a job, giving the sphere of activity and skills required and providing information about each job so the description could be used by the training forces as a basis for developing a training schedule. A training schedule was made based on information given in the job descriptions, listing jobs to be taught, breaking them down into their component parts, and providing the necessary job knowledge and teaching requirements.

An outstanding job of cooperative training was done in the Greenville, S. C., area, where Parker High School, working with local mills, trained over 1,000 workers. It was found that training was needed beyond the capacity of regular textile departments of the school. Accordingly, classrooms were set up near the mills. An advisory council of mill men assisted the director of the textile school in determining the needs and planning the programs for the various classes. Instructors selected by the school conducted the classes. The school arranged for payment of instructors through funds furnished by the U. S. Office of Education. A large number of men attended the classes in loomfixing, and women were trained as doffers, roving haulers, pilers, etc. The photograph at the head of this article shows classes in textiles at Parker High School.

Textile mill employees are among the war workers have taken the short courses of college level provided by the U. S. Office of Education. Some of the textile courses offered are on production, testing, and inspection.

**UTILIZATION OF WOMANPOWER.** A survey made by TEXTILE WORLD

with 100 cooperating mills indicated that approximately 100,000 women would be needed in 1943. A group of New England mill executives and textile-school officials, meeting around the first of 1943, reviewed the problem of getting women on textile jobs. One of the major problems considered at this conference was how to induce women to enter textile mills when Government-sponsored war projects offered higher wages. There was general agreement that mill conditions should be made more attractive for women and that much should be done to improve working conditions. Better sanitary conditions, rest rooms, and recreational facilities were among the improvements suggested.

Where the heavy work is shifted to a few men employees, women are able to perform such duties as tending cards, roving frames, slashers, tying-in machines, baling presses, cloth brushes, and shears. The illustration at the start of this section shows a young woman piecing up on a roving frame at Pepperell Mfg. Co. Other jobs, formerly handled by men, that women are doing well on include machine-shop maintenance work, inspecting, grading operations, oiling, sweeping, cleaning, roving hauling, and yarn sizing and testing. Technical, chemical, and research laboratories have drawn a large part of their replacements from the ranks of women. Clerical work, timekeeping, time study, production checking, and planning are among other jobs suitable for women.

**WORKING CONDITIONS.** Progress was made in improving working conditions—particularly from the viewpoint of accident prevention. One mill which made a careful study of the impact of war on its safety program reached the following conclusions: (1) A person of long experience in a department is the safest type and helps keep nearby inexperienced workers safe. (2) Intensive pre-employment courses in safety can do much to eliminate accidents, especially among younger employees. (3) Workers with some factory experience are safer than those without any experience. (4) Top executives must make it their responsibility to make the worker aware of the safety program at all times and see that the program does not become routine or secondary to production. (5) As the draft requires the younger and more alert men to report for duty, the safety program must be intensified so as to be effective with older or handicapped workers. (6) The mental state of all employees is most important, especially now when so many employees have their thoughts on other things or are affected by the war. (7) Workers should be educated and appealed to patriotically not to indulge in practices injurious to health or efficiency.

Better and safer clothing for men and women with emphasis on safety features, such as the proper headgear, neckwear, footwear, gloves, etc., have been advocated and adopted. Work clothes, especially for women, have been better styled for appearance.

**REDUCING ABSENTEEISM.** Studies made by the WMC and WPB to determine why workers took French leave for one, two, or three days at a time, unearthed an imposing list of causes. Among those are: uncertain transportation, bad weather, job hunting, unsatisfactory living conditions, proximity to military camps, plain shiftlessness, and lack of morale.

Because absenteeism is a human problem, depending upon each individual worker's circumstances, health, environment and morale, it can be controlled only within limits. One mill approached the problem from a very human angle, by recognizing the fact that workers get tired, feel bad, need recreation, diversion, rest, and society. Also they found that people are patriotic and realize the hardships and demands made upon soldiers and sailors, who were in many cases from their own families. Not being soldiers and sailors, the workers could not be ordered to stay on the job, but it was discovered that they would respond to incentives, leadership, and intelligent guidance by their associates.

By providing adequate transportation facilities for workers living in outlying districts, some mills have helped reduce absenteeism.

**LABOR-MANAGEMENT COMMITTEES.** Established for the immediate purpose of boosting quantity and quality of production, Labor-Management Committees are looked upon as laying the groundwork for improved relations between employers and employees after the war. Backed strongly by Government, management, and labor, this new movement has gained tremendous momentum in recent months. Near the end of 1943, it was found that over 1,012 new committees had been established in all industry since June, and that in all over 3,000 committees—embracing 6,000,000 workers in war plants, shipyards, and mines were—functioning. The textile industry has been more backward than most, only 30 plants being recorded in Washington as having organized labor-management committees. A few textile mills, where the management has recognized the value of such committees as a means of fostering industrial harmony and teamwork, have reported excellent results from the standpoint of increased production, improvement of products, and better employer-employee relations.

# NEW MILITARY FABRICS

*Experience gained during the first year of the war pointed the way to improvements which could be made in certain types of fabrics used by our armed forces. Accordingly, several of the earlier specifications were modified and a number of entirely new fabrics were developed. Although these newer constructions are designed specifically to meet the rigors of war, some of them offer interesting possibilities for peacetime use.*

**COTTON SATEEN.** One outstanding new fabric is a 9-oz. sateen covered by Specification P.Q.D. 245D. First developed for use in trousers for mountain troops, this fabric is now used for the field jacket, which is G.I. for practically all branches of the Army, and for enlisted men's uniforms for cold-climate field wear. Recently, the Air Forces have adapted the sateen for

their use, making a slight change in construction and fabric weight as indicated in Army Air Forces Specification No. 16147. The success of the sateen is due to its rugged construction, resistance to tear, and high resistance to air permeability. Thus, the 9-oz. sateen has an air-permeability rating of 100 sec., whereas 5-oz. poplin has a rating of 70 sec.

An example of improvement in fabrics is the 5-oz. poplin, P.Q.D. 1A. Originally this fabric was specified with an air permeability rating of 40 sec., but during 1943 it was possible to raise it to a rating of 70 sec. without major changes in cloth construction.

Sheepskin lining in QM clothing is being replaced by a new pile fabric shown in the photograph at the start of this section. This fabric, covered by Specification P.Q.D. 310A, is composed of 50% alpaca and 50% mohair and has a ½-in. pile. It is lighter, less bulky, and warmer than sheepskin. Furthermore, it possesses the advantage of making it possible to fabricate a garment by using the backing of the pile fabric for the outside, thereby eliminating the need for a separate backing fabric. Linings of pile fabrics are now issued with the field jacket for cold-weather wear.

Because of the unsatisfactory nature of cotton socks for combat use, part-wool and all-wool socks have been adopted which are covered in Specification P.Q.D. 334B.

An excellent example of the way in which textiles originally developed for civilian use have been adapted to military use is the cushion-sole sock covered by Specification P.Q.D 236B. This sock is knitted with terry stitches on the inside of the ring toe, sole, and high heel. First adopted for use by soldiers in the desert and jungle, this sock is believed to be well suited for wear under many different service conditions, as the cushion-sole tends to minimize formation of blisters on the feet of soldiers, and the terry stitch, which is wool, absorbs perspiration.

**PRE-SHRUNK BLANKET.** Newest development in woolen fabrics for military use is a pre-shrunk blanket, covered in Specification P.Q.D. 365. Intended for use in sleeping bags, these blankets are held in place by zippers; and shrinkage of the blankets during washing would make them unsatisfactory for this purpose. These blankets are of the same construction as normally procured, but are 56 in. wide and are pre-shrunk so that after three launderings they will not show a greater shrinkage than 5% in the warp and 2% in the filling. Usually they are pre-shrunk by a chemical treatment with melamine formaldehyde.

Vinyon E, the elastic type of Vinyon, is used to replace rubber yarns in canopy suspension cords for jungle hammocks, in WAC garments, and other purposes.

The Boston QM Depot now issues a high-canvas-top boot for jungle fighters. Experience showed that a canvas top, properly treated, outwears leather, which is deteriorated rapidly by hot, moist atmosphere. The Chicago QM Depot has introduced an ambidextrous glove which may be worn on either hand. Knitting the thumb in a straight line with the other digits makes this glove possible.

Several noteworthy developments have occurred in "fabrics for the air." One is a rip-stop parachute fabric—first developed in Nylon for human chutes. This fabric, covered in Army Air Forces Specification 16136, is constructed with cords in both warp and filling at about ¼-in. intervals which stop a rip in the fabric if it should develop. The rip-stop principle has made possible human chute fabrics weighing less than 1 oz. per sq. yd.

Delivery chutes for lowering heavy loads to fighting troops are now being made from a high-impact acetate rayon fabric, covered by Air Forces Specification 16144. The fabric has an elongation of not less than 45% and a tear resistance of not less than 20 lb. in either warp or filling direction.

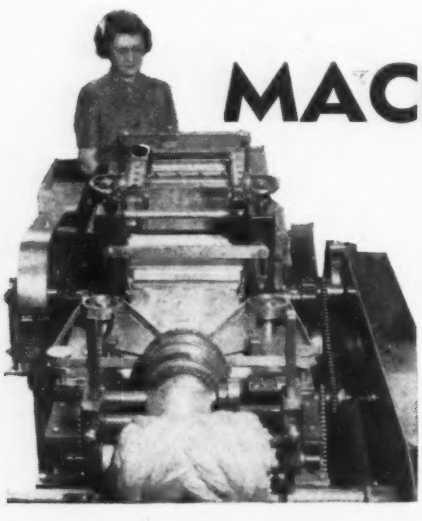
Flare chutes, Army Air Forces Specification 16138, have been developed, using a 30-den. saponified acetate yarn. This yarn, which is one of the strongest of man-made fibers, is also being employed for paulins, powder bags, braids, lines, cords, tapes, and sewing thread.

Fiberglas shields for flares to prevent the 1,000,000 candle-power magnesium flares from blinding pilots overhead were developed in 1943. Other uses of Fiberglas cloth include drops for doorways in destroyers and the outer layer for Fiberglas bats used to insulate landing barges.

An interesting innovation is a special plied cotton fabric for life rafts. A special basket-weave fabric forms the bottom layer, to which two other fabric layers, of plain weave, are added to create a tear-resistant, gas-tight fabric.

Other recent developments include Nylon tenting material, rayon covers for engines, and rayon fabrics for self-sealing gas tanks.

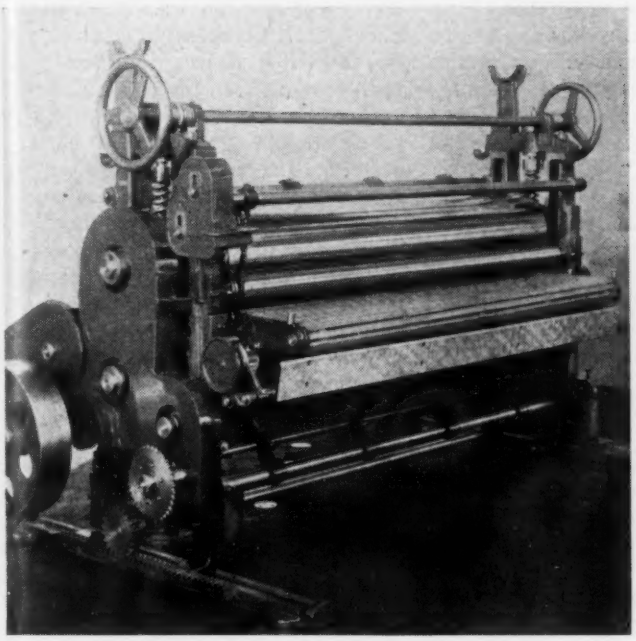
**QUALITY CONTROL.** Adoption by the Philadelphia Quartermaster Corps and other Government procurement agencies of statistical methods for control of quality of products purchased has focused attention on the use of quality-control charts. The statistical, or control-chart, method of controlling quality during production has at least six advantages over the usual methods. At the request of the War Department, the American Standards Association has developed and published two manuals describing the control-chart technique. A number of textile mills have already adopted the control-chart method for controlling quality of both military and civilian products.



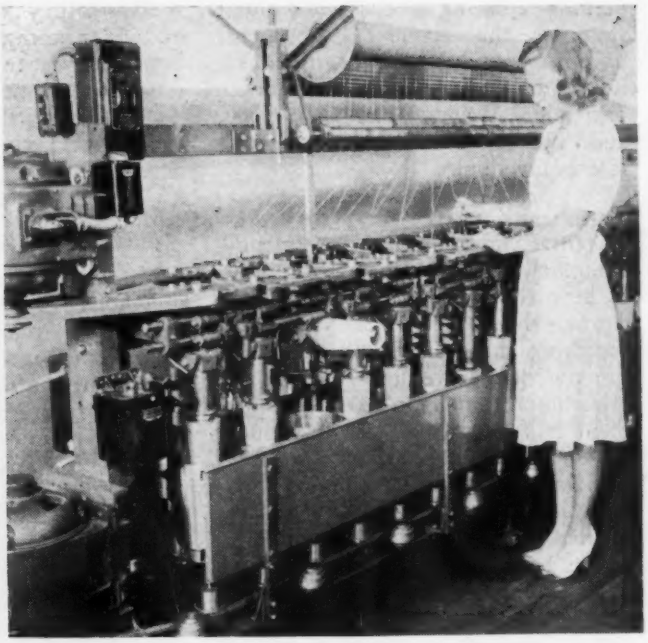
# MACHINES AND METHODS

*Continued restrictions on manufacture and sales of textile machinery limited the introduction of new machines and new mechanical processes, and purchases of textile mill equipment during 1943 were confined almost entirely to those essential to the war effort. There were, however, a few noteworthy developments in productive and auxiliary equipment and in manufacturing processes. Some of these played a definite part in solving the problem of stepping up the output of textiles for military use.*

**BURR - CRUSHING MACHINE.** One type of equipment which has been installed by several mills for the purpose of increasing production and improving quality of woolen fabrics is a burr-crushing machine, which was originally



*Burr-crushing machine used as adjunct to cards increases production and improves quality of woolen fabrics.*



*30-spindle woolen frame embodying pot principle was demonstrated but is not yet available commercially.*

developed in Europe and is now being made in this country. This device, which is installed as an adjunct to woolen cards, is designed to crush to a readily removable dust or powder, all burrs, straw, pieces of hard skin, tar lumps, and other impurities present in the web as it leaves the doffer of the intermediate card.

In operation, the web leaving the doffer is passed between the two cylinders. The high pressure exerted by the cylinders crushes the burrs and other foreign bodies to a powder, but does not injure the normal wool fibers. The crushed bodies drop out when the web is passed on to the next card. Because of its effectiveness in removing foreign material, the machine permits use of lower grades and cheaper stocks to obtain yarns and fabrics of better quality. With some stocks, carbonizing can be eliminated. Card speeds can be increased up to 10%, since a heavier sliver can be made for equal counts of yarn. Further, spinning speeds on mules and frames can be increased up to 20%, and labor costs reduced, due to the fact that there is a reduction of about 75% in yarn breakage.

Although, due to the priorities system, new developments in textile-mill equipment were few and far between during 1943, it is probable that practically all textile-machine shops had projects under way for new equipment, some of which may reach the light of day in the postwar era. Such development goes on at all times, however, postwar or no; and, as usual and for obvious reasons, most machine builders are reluctant to publicize their work until it is perfected, proved, and ready for the market.

**POT-SPINNING FOR STAPLE FIBERS.** One development, however, which has been demonstrated during the year is a pot-spinning frame for woolen and other staple fibers. Arrangements have not been made for building it commercially, although United States patents on both process and machine have been secured and others are pending in Great Britain and Canada. The inventor is John J. McCann, who was co-inventor of a successful single-pick attachment for multi-shuttle automatic looms a few years ago. His shop is located at Andover, Mass.

The accompanying photograph shows the 30-spindle woolen frame which Mr. McCann has demonstrated. It embodies not only the pot principle of spinning but also an ingenious new method of drafting. Let's follow the stock through the machine.

The roping leaves the jack spool, passes down through conventional feed rolls, and enters one of the revolving twisting tubes, which is slotted at the top to cause the usual "teetering" or shaking of the strand and which eliminates the conventional centrifugal clamp. It then passes through two pairs of drafting rolls, in each of which one roll is so cut away that it contacts the other roll for only a part of its revolution. The two pairs of rolls have this contact so staggered that, while one pair grips the strand, the other releases it; and this arrangement permits the twist provided by the twisting tube to pass through one pair and then the other, effecting a merger with the additional twist provided by the revolving pot. The flow of twist is therefore similar to that on a mule.

The strand next passes through a second vertical tube which moves up and down inside the revolving pot to give traverse to the yarn. The yarn builds up against the sides of the pot, held there by centrifugal force. When the pot is stopped, the yarn collapses onto a large paper cone held on the traversing tube. A vertical baffle plate inside the tube restricts ballooning, and a fan built into the bottom of the pot facilitates threading by sucking the end down through the tube. Lead ends, always defective because of lack of twist, are not incorporated in the package on the McCann system, but fall into a small under-extension of the main pot. Piecing up is accomplished merely by dropping the new end into the twister tube, the ends being tied on the outside of the package after the cone has been removed. This method of piecing eliminates front-roll speed as a limiting factor in the rate of production.

Free movement of the twist between pot and drafting field is facilitated by the absence of yarn guides and the fact that the strand runs in practically a plumb line from teetering point to pot. Mr. McCann claims large-sized packages of unusually lofty and even yarn can be produced by this principle at high speed. He also stresses that defects are minimized by the manner of piecing up which his machine makes possible. He has also developed a creel arrangement which

permits replacing jack spools without stopping the frame. Experiments have been conducted with other drafting systems and the same pot-spinning principle. Worsted, mohair, rayon, and other fibers have been spun with interesting results.

**EQUIPMENT FOR COTTON AND RAYON.** Refinements in cotton opening equipment include a new feeding unit to be used with a lattice opener and cleaner; this unit feeds the distributor supplying the pickers and eliminates the use of an overflow system. Another improvement in opening equipment is an improved rake distributor system in automatic feeding machinery; this type of rake maintains alignment longer and permits easy replacement of broken teeth. Elimination of canvas backing in hopper feeders and in bale breakers has been made possible by the use of leather runners; it is stated that such construction reduces fire hazard, as lint no longer collects between the slats.

In the field of cotton spinning, an improved slubbing attachment has been developed for obtaining a better distribution of or creating a desired pattern of slubs in yarn. Also, of interest is a pneumatic stop-motion for roving and spinning frames; this motion may be set to stop the frames for doffing at any desired package size.

Use of rayon cakes for throwing has increased, as soaking and drying techniques have been developed. The latest trend is to circulate the soaking liquor and to agitate the yarn gently. Cakes with transfer tails also show promise in high-speed warping. Several rayon-cake-holding and unrolling devices were introduced during the year.

Scarcity of coning machines encouraged the use of rayon spinner's packages, which, due also to savings realized, are being adapted to present machines by use of special attachments.

Akin to buying rayon tire cord yarn on twister beams, many weaving plants began last year to purchase acetate yarn on section beams ready for slashing. To handle and ship these large "packages," special cases and lift trucks were developed. This partially compensated for the tight position of gelatine for slashing, which made extenders and substitutes necessary. Several casein-base sizes were developed, as well as numerous starch-derivative and synthetic resin extenders.

Among developments in weaving equipment is a narrow-fabric loom designed for production of heavy webs and heavy tubular fabrics, especially those fabrics which are woven and employ non-stretch yarns, such as firehose. The framework of the loom is designed to absorb the shock resulting from the beat of the batten and also to withstand the strain of the shedding. Vibration is reduced by the balancing of the batten motion. The tension on the warps is derived by means of friction rolls. Take-up rolls are entirely new in design, and the assembly insures an even take-up when weaving a fabric made with a tubular weave.

Due to the shortage of dogwood, several new types of shuttles have been introduced. One is a laminated shuttle utilizing small pieces of dogwood in its construction, and another is constructed of persimmon wood. Plastic thread accumulators replace glass ones used on the S-5 series of C & K looms.

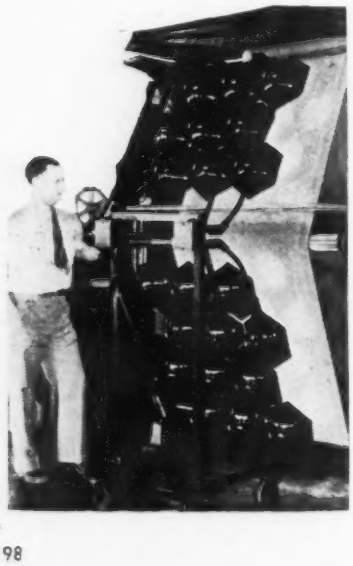
**TOW-TO-TOP PROCESSES.** Progress has been reported in the development of tow-to-top processes for producing spun rayon yarn. The original Perlock process has undergone considerable modification, and at least two other processes have been developed and are being employed to a limited extent. With one of the newer machines, which is illustrated at the beginning of this section, several ends of rayon tow pass between a pair of helical shears which cut the tow diagonally to produce short fibers of a given length which then feed into a gill box. False twist is inserted in the condensed web, and the resulting sliver is wound on tubes. In a second stage of this process the sliver is further drafted and condensed and is then spun into yarn. The other of the two new methods produces a top in which the cut fibers are of different lengths. This variable-length top is said to blend better with natural wool top.

Varied-staple rayon was developed by one rayon producer to meet the need for staple having a staple diagram similar to that of wool top. These fibers are offered in several varieties, the length of fibers declining gradually and evenly from 6 to 3½ in., from 5 to 3½ in., and from 3 to 2½ in. Fiber denier is 5.5.

Shortage of loopers gave rise to a new method of closing seamless hosiery by means of an overseaming machine. Knitters which have adopted this method report increases in production of as high as 60%.

Developments of particular interest to textile mill engineers include high-capacity ball reciprocating bearings, several different types of variable-speed drives and speed controllers, a device for oiling overhead bearings and belts, and an oil-reclaiming apparatus. Fluorescent lighting circuits have been improved to eliminate blinking and give almost instant starting of the lamps.

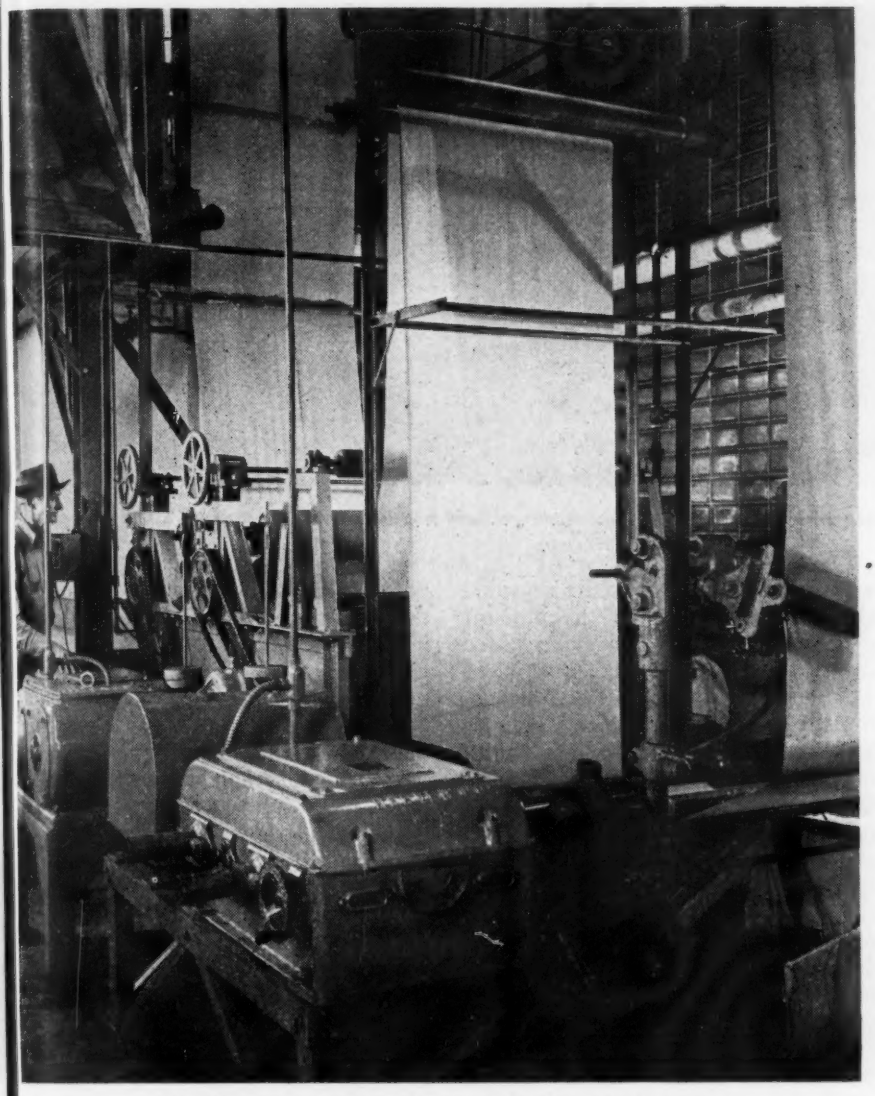
A new method of binding Koroseal to steel, wood, or concrete has made it possible to use this material to line tanks, especially those for holding acids. Another coating has been developed which may be painted, sprayed, or otherwise applied to such tanks for protecting them against acids and alkalis. Surface hardening of stainless steel parts to 1200 Brinell is effected through use of a recently developed process.



# FINISHING ADVANCES

*Much of the recent progress in bleaching, dyeing, and finishing is due to the continued demand for fabrics for military purposes. This is particularly true in regard to the development of special finishes and of other improved processes which permit speeding up of production. However, many of these techniques can be adapted to peacetime uses and will continue to be important after the war.*

**CONTINUOUS BLEACHING.** Over a period of 100 years or more many efforts have been made to develop a practical method for the continuous, open-width bleaching of cotton fabrics. By 1930 the major mechanical prob-



**Continuous, open-width, peroxide bleaching range.**

lems had been solved, and further progress was up to the chemist. Then about 6 years ago it was discovered that if cotton fabrics are causticized, impregnated with hydrogen peroxide solution, and then exposed to live steam, they become white in a few seconds. Systems embodying that principle were installed in several mills for bleaching cotton piece goods continuously in rope form. Concurrently, work was begun by producers of peroxide, machinery builders, and textile mills to adapt open-width equipment to the continuous, peroxide bleaching process. Call by the Army for large yardages of vat-dyed twills and other fabrics which cannot be bleached satisfactorily in rope form stimulated this work, and in 1943 continuous, open-width peroxide bleaching became a reality.

One of the first complete open-width ranges was installed by Riverside & Dan River Cotton Mills and was described in detail in last month's issue of TEXTILE WORLD. In this range bleaching is carried out in 10 steps as follows: (1) impregnating cloth with caustic soda solution; (2) heating with direct steam; (3) piling in a J-box (4) washing in a vertical washer, souring, and again washing; (5) saturating with peroxide solution (6) heating with direct steam; (7) piling in a second J-box; (8) washing in two vertical washers; (9) drying on cans; and (10) winding on an automatic winder.

**INFRA-RED DRYING.** A trend which was apparent a year ago and which has grown stronger during the last twelve months is the use of infra-red lamps and gas-fired infra-red units to speed up the drying of textiles for military and civilian purposes.

Among the applications of infra-red lamps and gas-fired radiant-heat burners are in drying of carpets, velvets, plushes, rayon piece goods, and thread; in Sanforizing cotton piece goods (as shown in the illustration at the beginning of this section); in carbonizing woolens; and in warp sizing. Gas-fired burners are employed also for singeing. To date most installations of infra-red units have been made in conjunction with existing drying equipment, such as dry cans, loop dryers, etc., to increase drying speeds and output of the machines. It is probable, however, that in the early postwar period drying equipment will be designed in which infra-red lamps or gas-fired burners will be the sole source of heat.

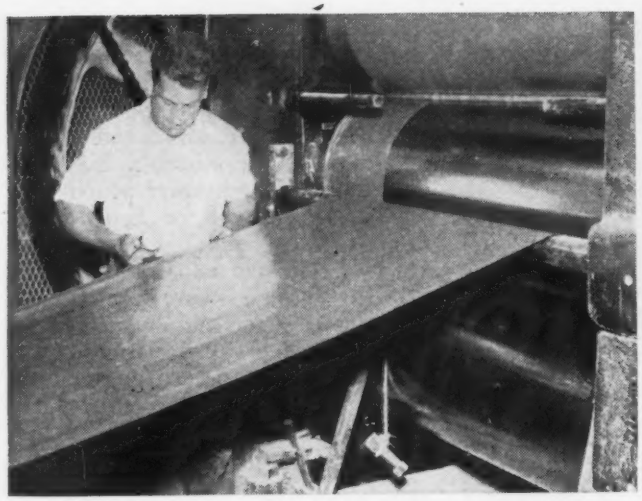
Many advantages have been claimed for infra-red dryers and drying. These include savings in operating costs, smaller floor space needed, greater flexibility, improved quality of product, and less spoilage. It is stated that the high temperatures obtained permit quick drying and are particularly advantageous in curing or ageing operations where textiles which havs been treated with chemicals must be subjected to temperatures of 400° F. or higher to complete the chemical reaction.

Unfortunately, little authorative data are yet available on the advantages and limitations of infra-red drying. Some studies have been made of infra-red drying of textiles, but there are still many varying and conflicting claims. A great deal of further research is needed, therefore, to find out what actually takes place in infra-red drying and to determine the efficiency of various types of infra-red drying equipment under different conditions of use.

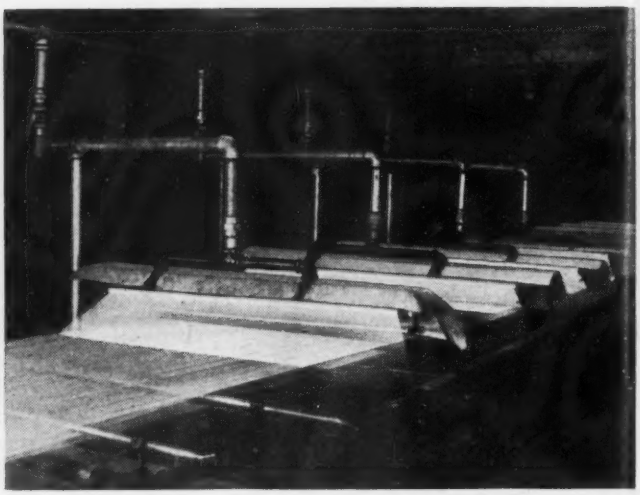
It is known, for example, that the heat generated by gas-fired burners is a combination of radiant heat and convection heat, and that the higher the temperature of the refractory from which the burner is made, the higher is the amount of radiant heat transmitted to the fabric. On the other hand, there is considerable controversy as to the proper refractory temperature for various types of textiles. Again, it is known that typical lamps and reflecting equipment have theoretical efficiencies of 50 to 70% in delivering input lamp watts onto the working plane. However, little, if any, information has been published showing the actual thermal efficiency of infra-red units under mill conditions.

As further experience and knowledge are gained, infra-red drying units undoubtedly will be designed and engineered for specific textile applications.

**FINISHES FOR MILITARY FABRICS.** Requirements by our Armed Forces for waterproof, mildewproof, flameproof, and gas-proof fabrics have led to a great deal of work on the development of special finishes. Results of much of the work which has been carried out are classed as military secrets and details have not yet been made public. One noteworthy trend which



*Coating Army raincoat fabric with a vinylacetal plastic.*



*Gas-fired radiant-heat burners for drying sized warps.*

can be mentioned is the use of combination finishes which afford protection against two or more agencies. For example, large amounts of cotton duck have been procured with a fire-, water-, and weather-repellent finish. Coated fabrics have proved to be of great importance for a variety of military purposes, and during the last year numerous improvements have been made in coating materials and methods. It has been found too that the fabric construction and the finishing treatment the goods receive prior to coating are factors influencing the strength of the bond between the coating and the fabric. Also, some experiments have been made on coating by means of plastic emulsions.

That the chemical manufacturers have contributed greatly to the improvement of these special finishes is indicated by the fact that a half dozen or more companies have brought out compounds for treating textiles to meet Government specifications, several firms have introduced new water repellents conforming to PQD-115A, others have announced flame- and weather-resistant finishes for camouflage nets, and still others have developed improved synthetic resin formulations for coating Army raincoats and other materials. New permanent cellulose finishes have been evolved for finishing mosquito nettings and other military fabrics.

Savings of 50% in the amount of sodium bichromate used in the afterchrome method of wool dyeing are made possible as the result of experiments made to determine the minimum amount of chrome needed. As a result of over 1,000 tests, it was found that for dyeings of 0.025% or less, the minimum quantity of sodium bichromate needed is 0.125 to 0.3% based on the weight of the material being dyed; for heavier dyeings one-fourth the weight of the dye is sufficient, provided that it is greater than the amount necessary for a 0.25% dyeing. Three dyers have processed 4,000,000 lb. of wool according to these recommendations since the beginning of 1943 and have saved 18,000 lb. of sodium bichromate by so doing. In addition, by reducing the amount of bichromate, the fastness of the dyeings was improved and a better hand was obtained in the finished fabric.

Call by the Army for OD underwear manufactured from colored yarns or dyed in the piece led to the development of improved processes for vat dyeing raw stock, yarns, and knitted fabrics. For raw-stock dyeing, two processes have been worked out—a pigment method and a reduced-dye method. For package dyeing of yarn, a pigment method was evolved in which glue and soluble pine oil are employed as leveling agents and an unusually high concentration of caustic soda is employed in reducing bath to overcome the inherent instability of the leuco compound. For knitted fabrics, special formulas have been worked out which permit dyeing to be carried out by the reduced-bath method in reel machines.

Production of OD No. 7 on herringbone twill and other fabrics called for minor modifications of the pigment-pad method because of the larger amount of dye needed as compared with that used for the older OD No. 8. Although most plants are using the pigment-pad method, a few are dyeing by a continuous process which permits much faster production.

A new process for vat dyeing spun rayon fabrics was announced during 1943, but no details have been made public on the method employed.

**DYEING ACETATE RAYON HOSIERY.** In addition to the progress made in processing fabrics for military purposes there have been some advances in dyeing and finishing of textiles for civilian use. One noteworthy example is the pre-boarding and dyeing of acetate rayon full-fashioned hosiery. Although these operations have not yet been standardized, certain guiding principles have been established. First of these is that the temperature at which preboarding is carried out has an effect on the strength and luster of the yarn and the amount of dye it will absorb. Thus, a series of experiments in one mill showed that hosiery preboarded at 190° F. had a bursting strength of 68.4 lb., whereas hosiery preboarded at 235° F. had a bursting strength of only 46.1 lb., a loss of 22 lb. However, as preboarding at 190° F. does not shape the stocking properly, nor eliminate wrinkles and sleaziness, a somewhat higher temperature is necessary. The mill mentioned above has standardized on a temperature of 210° F., which results in a bursting strength of 64 lb. The experience of other mills is that preboarding temperatures of 205 to 208° F. are satisfactory.

Second of the principles is that scouring, dyeing, and finishing must be carried out at a lower temperature than that used for preboarding. There is, however, a considerable difference of opinion as to the optimum dyeing temperature. In most plants dyeing is carried out at 170 to 180° F., but at least one mill is dyeing at 200° F.

The third principle is that, to prevent wrinkles, dye nets and dying machines should not be overloaded, scouring and dyeing should be carried out as quickly as possible, care should be exercised in extracting, and bags of hosiery should not be piled on top of one another before the stockings are given the final boardings.

Several new compounds have been introduced for soaking and sizing rayon

hosiery yarns and for finishing rayon hosiery.

**NEW CHEMICALS.** Among new chemicals introduced in 1943 and not mentioned above are included a number designed to replace scarce materials. Thus three glycerine substitutes have been brought out, in addition to apple sirup, which, because of its hygroscopic properties, is believed to have a number of potential textile applications. Tall oil, a product which has been employed for some time in a limited number of mills and by several manufacturers of textile soaps and oils has been made generally available to relieve the shortage of red oil.

A new starch derived from waxy maize and having unique properties is expected to find use as a replacement for tapioca and potato starch and for other purposes. Trimethylcyclohexanol is a new primary alcohol which can be employed in place of cresylic acid, cyclohexanol, and cyclohexanone.

Of particular interest is a water-repellent which is applied by exposing the material to be treated to the vapors given off by the compound at temperatures below 212° F. The effect of this treatment is to form an extremely thin water-repellent film on the surface of the material. The compound is being used for treating ceramic insulators, and methods for applying it to textiles are now being worked out.

Commercial production of nitroparaffins and their derivatives makes available to the textile industry a new group of chemicals which may become important in such varied applications as wetting agents, scouring agents, cation-active finishing agents, mercerizing assistants, kier-boiling assistants, and lubricating emulsions. New also is a high boiling hydro-carbon oil suggested for use as a fiber lubricant and softener, constituent of detergent formulations, plasticizers for synthetic resins, and solvent where low volatility and low flammability are desirable.

Other new chemicals are an organic alkyl peroxide which is soluble in organic solvents and which is believed to be suitable as an oxidizing and bleaching agent; a soap extender which can be substituted pound for pound for a considerable percentage of the soap customarily used in various operations; two related series of surface-active agents including emulsifiers; wetting agents and detergents; an emulsion stabilizer and penetrant. Still other new chemicals include a thickener for use in pigment printing and dyeing; a white pigment consisting of fine particles of hydrated calcium silicate; a transparent resin for use in protective coatings; a range of plasticizing oils for use with synthetic resins to increase flexibility and reduce hardness; a toxic preservative for cotton rope; a universal indicator for identifying textiles; and several types of ion exchangers for use in purification of water processing solutions and in trade-waste disposal.

**FINISHING AND TESTING MACHINES**

New finishing equipment brought out last year and not mentioned above includes a continuous impregnating range for padding rayon tire cord; a constant-speed and constant-tension unwind and windup system for use in coating and other operations; a squeeze roll extractor for knitted and pile fabrics; a combination squeeze roll and scutcher to replace a water mangle; a dryer for knit goods; an improved railway sewing machine; and an air lift for operating the table on folders.

Among new or improved testing equipment are a sample dryer that dries and conditions a sample in from 2½ to 3½ min.; a fading and ageing lamp that closely simulates sunlight; an instrument for measuring gloss; a hydraulic testing machine for breaking parachute webbing and a high-altitude test cabinet for laboratories testing military fabrics.

# ELECTRONIC DEVICES

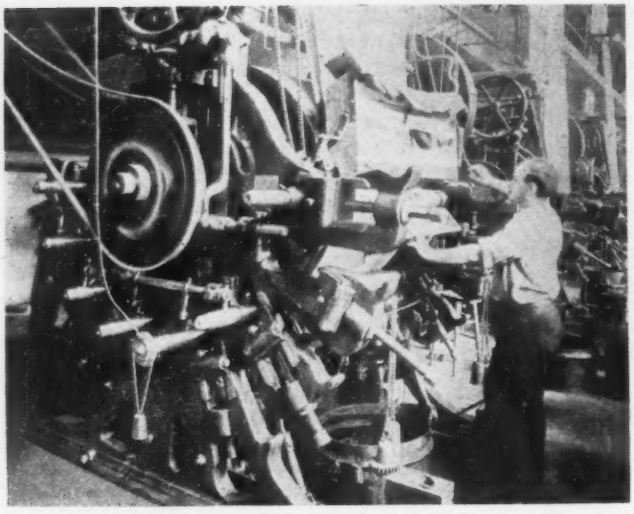
*One of the salient features of electronic equipment is its versatility. The electronic tube—which is the heart of any electronic device—can act as a rectifier of electric current and it can detect, measure, control, and amplify impulses produced electrically, mechanically, chemically, or from a beam of light. Mention was made in the January issue of* TEXTILE WORLD *of a score or more textile-mill applications of electronic devices.*

**ELECTRONIC DRIVE.** Some authorities believe that perhaps the most important use of electronic equipment will be in adjustable-speed drives. Several such drives have been brought out in recent years, the latest being introduced last spring.

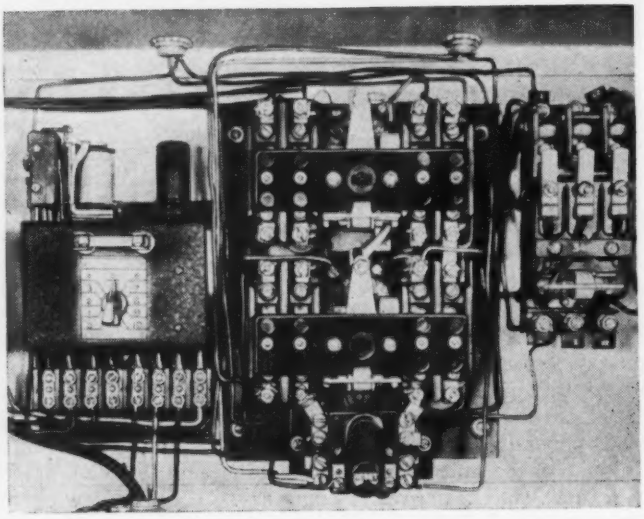
This new drive provides speed regulation over a 20 to 1 speed range for d-c. motors operating from an a-c. source. Among textile applications suggested are on warpers, winders, starch mangles, padders, Sanforizing machines and other equipment where constant linear speed at uniform tension or wide speed range with close regulation is an essential requirement.

The new drive has four parts. These are: (1) power transformer for separate mounting, (2) control cabinet with thyratron-tubes and current-limiting and speed-regulating control, (3) control station with potentiometer to vary the voltage supplied to the armature and field circuits and with start and stop pushbuttons, and (4) shunt-wound, d-c. motor.

The equipment is designed automatically to regulate a preset motor speed so as to maintain essentially constant speed regardless of load. It converts alternating current from the power line into the required direct current by means of two electronic tubes, which allow current to pass in one direction only. A grid inside these tubes is connected to a speed-control dial in front of the operator. Turning this dial varies the voltage on the grid so that it lets more or less power pass through the tube to the motor. The speed-control dial moves a metal button that rides on a semi-circle of smooth carbon. It can be turned to any desired point, giving an infinite number of speed variations over the complete range. Power coming through the two main tubes is fed into the revolving part of the motor. When the speed range of these tubes is exhausted, the control dial acts upon a second pair of thyratron tubes, smaller in size, that widen the speed range still more by increasing or reducing the amount of power going into the field coils. The control cab-



*Stroboscopic inspection system and electronic control unit applied to high-speed printing machine.*



*Electronic timer employed on shears to prevent seams from being cut replaces conventional rotary timer.*

inet containing the electronic tubes is shown in the illustration at the beginning of this section.

**TIMER FOR SHEAR.** Another of the important applications for electronics is in improving quality of and preventing damage to textiles during manufacturing and finishing. For example, an electronic timer has been developed recently to replace the mechanical or rotary pin type timer used on shears to prevent seams from being cut.

The electrical control apparatus detects seams and other obstructions on the cloth as it approaches the revolvers. When the obstruction reaches a predetermined distance from the first revolver, the electronic control causes the revolver motor to operate in a reverse direction. Obstructions will then pass between the ledge blade and the revolver without catching or cutting the cloth. The motors driving the rotators continue to revolve in a reverse direction until the obstruction has passed the last revolver. If two obstructions are located in the goods closer together that the distance between the front and back revolvers, the electronic timer will reverse the direction of the motors of the revolvers and they will so continue to operate until the last obstruction clears the last revolver.

Operating on 110-volt current, the new electronic timer consists of a magnetic reversing switch controlling the revolvers and a single-pole relay for maintaining the pilot circuit in the switch. Stop-and-start push-button stations are located at all points from which it is desirable to control the revolved motors. An electronic unit controls the time that the revolvers are reversed and operates in connection with a seam detector or trip switch. A hand switch and pilot light is provided for controlling and indicating the 110-volt current used to operate the timer.

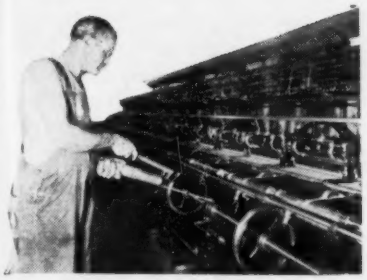
A new application for an electronic time-delay switch is to shut down feeding equipment to prevent overflow of cotton from a bin onto the floor. To shut down the feeding machinery automatically, a mercury switch is applied which trips when the cotton in the bin reaches a predetermined level. Since at this level the continuously rotating cotton in the bin is constantly tripping the switch, the mercury switch is supplemented by an electronic time-delay relay. Once the mercury switch has initiated a shutdown period, the relay keeps the cotton feeding equipment inoperative for a pre-selected period of time, irrespective of the opening and closing of the mercury switch. After the time period has elapsed, the mercury switch again takes over to start the feeding equipment.

Recently an electronic relay has been developed which has several advantages over the usual magnetic relay employed in conjunction with stop motions for beamers and similar equipment. This relay is basically an electron tube amplifier having an input circuit and an output circuit. When the input circuit is closed by the drop-switch contacts, such as when a yarn breaks, a minute current flows in the input circuits. This current is greatly amplified by the electron tube, which is in turn operates an electromagnetic relay in the output circuit. The relay then opens the coil circuit of the motor switch, thus stopping the motor.

Now in the experimental stage is an electronic sewing machine that employs radio-frequency current, instead of a needle and thread, to join plastic materials. In operation, thermoplastic coated fabrics to be sealed, or "sewed," are fed across a table top through two small rollers which serve as the "needle." A small radio-frequency generator is connected to these rollers. As they pull the material along, they cause a concentrated beam of radio frequency current to pass through the material. Heat generated by a dielectric loss, together with a very light pressure, causes the thermoplastics to fuse, or weld, in a tight bond.

**HIGH-FREQUENCY DRYING.** Electrostatic heating and drying equipment is being employed in several industries and is believed to have a number of potential applications in drying, curing, and ageing of textiles. In principle, high-frequency heating consists of converting electricity into a form which will cause the molecules of a substance to distort and rub together, thus setting up friction which results in heat. The heating unit consists of a circuit breaker, high-voltage transformer, rectifier tubes, high-frequency tubes, and electrodes between which the material to be treated is placed.

Among the suggested applications of high-frequency electrostatic heating are in manufacture of felt; drying of cotton, wool, etc.; and in special finishing operations which require application of heat at relatively high temperatures under controlled conditions. It is understood that experiments are now being carried out on the drying of rayon in cake form. Other possible uses are for drying yarn on packages and beams and fabrics wound on rolls.



# MILL MAINTENANCE

*In 1942 and again in 1943, the No. 1 problem of mill engineers, master mechanics, and maintenance men was to keep the machines running. Long hours of operation, growing shortage of skilled mechanics, and green machine operatives complicated the problem. Despite these obstacles, the men responsible for maintenance of equipment have done a remarkable job.*

**PREVENTIVE MAINTENANCE.** Great stress has been placed on the importance of preventive maintenance to prevent long and costly breakdowns, and many mills have worked out definite schedules for the inspection, cleaning, lubrication, and overhauling of various types of machines. Careful inspection at periodic intervals has proved particularly helpful, as it frequently discloses a worn part or other condition which can be replaced or otherwise remedied before a serious breakdown occurs. More attention than ever before has been paid to the proper selection and application of lubricants as factors in preventing premature or excessive wear.

Because it has been necessary in many instances to employ lower-skilled workers as machine operatives, cleaners, oilers, fixers, and mechanics, the use of instruction sheets and charts has been emphasized. These instruction sheets, giving clear and detailed directions, for inspecting, cleaning, lubricating, and overhauling are posted on or near each machine. Many equipment builders have issued such instruction sheets and charts, TEXTILE WORLD has published a considerable number of them, and various mills have developed others to meet their individual requirements.

To counteract the shortage of manpower, women and girls have been trained and put to work as oilers, fixers, etc. Several plants have found it advisable as an emergency measure to train women weavers for specialized jobs of loomfixing. One company which has put in such a plan has divided loomfixing into such specialized jobs as the following: (1) fixing driving motion (2) fixing let-off and take-up; (3) fixing transfer (4) fixing pick-motion and (5) fixing harness motion. Each of these and the other major jobs have minor motion adjustments added to give complete coverage of the loom.

Many mills have discovered that metallizing by spraying with molten metals affords a quick and economical means for reclaiming worn parts of textile machinery and for building up protective surfaces. Likewise welding has proved to be an effective method for repairing broken parts and fabricating various items which can be made in the plant machine shop.

**THREE-DIMENSIONAL SEEING.** Increased production, reduction in percentage of seconds, fewer accidents, and improvement in employee morale, are the benefits reported by textile mills which have adopted a new method of improving seeing conditions through the proper combination of color and light. Called "three-dimensional seeing," this new method is the result of several years of scientific research. Already adopted by several large companies, this development gives promise of revolutionizing the methods of painting ceilings, walls, floors, and equipment in textile mills.

In the average manufacturing plant ceilings are painted white; often the walls too are white, even down to the floor; machines are black, dark gray, or dark green. In such surroundings, piling on high-intensity lighting does not produce expected improvement.

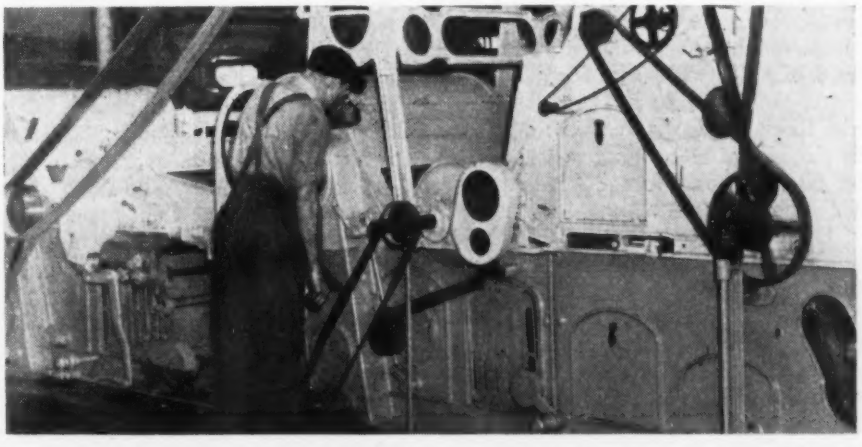
Early in 1937, an investigation was started on a public utility company to determine how to provide the best natural seeing conditions indoors. Soon afterward one of the leading paint manufacturers joined in the investigation. The experiments carried out showed that it is practical to increase the illumination from most lighting systems 100% without any change in lighting equipment or any increase in wattage. In addition, they led to the development of a scientific method for selection of colors for any industrial area.

It was found that machinery should be painted in colors having high light-reflection qualities. With such colors, the usable light at the immediate working point is increased. Colors for painting the working areas are referred to as "spotlight colors." The spotlight color selected for a specific job should contrast in hue with the material being manufactured, and it should be continuously stimulating and comfortable to the workers.

Once the spotlight color is selected, the next step, with some types of equipment, is to select a background color of contrasting hue for the body of the machine. This background color also should have a high light-reflection value.

With many types of textile machinery, however, the practice is to use a light-reflecting color, such as Turquoise Blue, for the body of the machine and a contrasting brilliant color, such as Safety Red, for moving parts and other danger areas.

Treatment of floors, walls, and ceilings is quite important. Here again, use of light-reflecting colors is necessary to provide maximum utilization of light. Various combinations of colors are suitable for this purpose. Any combination selected should not cause undue dye fatigue; also the hue



***Principles of three-dimensional seeing applied in picker room; machine is painted two shades of light-reflecting green and danger points a brilliant red.***

and brightness should be of such character as to emphasize a return of the eyes to the working area and to have their greatest comfort while there.

Typical combinations recommended for textile mills are as follows:

*Picker Room:* Ceiling—White Eggshell Finish. Upper Wall—Sea Green Low-Luster Enamel. Dado or Horizon—Jade Green. Machinery—Spotlight Green. Danger Areas—Safety Red or Spotlight Buff.

*Card Room, Spinning Room, Winder Room:* Ceiling—White Eggshell Finish. Upper Wall—Capri Blue. Dado or Horizon—Turquoise Blue. Machinery—Turquoise Blue. Danger Areas—Safety Red.

# RESEARCH PROGRAMS

*Interest in textile research was stimulated by the announcement in 1943 of far-reaching plans for extension of present programs and inauguration of new projects. Undoubtedly, however, the enthusiasm would have been even greater, had it been possible to tell the results of the research which has been carried out since Pearl Harbor. However, reporting of most of the work of a military nature, on which all the leading research agencies have concentrated, must be postponed to a later date. It is possible, on the other hand, to outline the steps which have been taken to broaden research activities in the future.*

**RESEARCH AGENCIES.** The Textile Foundation, which for a decade or more has sponsored much of the fundamental research on textiles, announced in 1941 its intentions of self-liquidation after a certain number of years. Meantime, until its funds are exhausted, the Foundation will continue its activities—which consist mainly of fundamental research which will be carried out at the National Bureau of Standards by the Foundation's research staff. At present this work is very largely on problems of a military nature. The Foundation also will continue its working arrangement with Textile Research Institute, Inc. Under this arrangement, the Foundation has supported some of the activities of the Institute.

Textile Research Institute, for its part, has formulated a five-point program covering fundamental research, applied research, economic research, dissemination of research information, and training of graduate students for textile research. Plans are being completed for the solicitation of a research fund of $300,000 a year for five years plus a capital fund of $500,000. Textile Research Institute is committed to the policy of carrying out research on all fibers and for all branches of the industry.

The Institute of Textile Technology was organized last August as a scientific and educational institution. Membership is limited to firms owning cotton spinning or weaving equipment. Patterned on the highly successful Institute of Paper Chemistry, the Institute of Textile Technology contemplates a combination of research and education at the graduate level. At the end of 1943 approximately 25 companies representing over 3,000,000 spindles had signed up.

The Cotton-Textile Institute, Inc., and the National Cotton Council of America are sponsoring a limited amount of research on cotton growing, utilization, and manufacturing. Steps were taken last year to correlate the work of these two organizations.

The recently organized Industrial Fiber Society, which is composed almost entirely of technicians and research men employed in southern textile mills, has held two meetings to discuss mutual aims and problems relating to research on all fibers.

Callaway Institute, Inc., was established last year to conduct research on a contract basis for Callaway Mills and other corporations or individuals. Each project is carried out at the expense of the sponsor and all findings become the property of the sponsor of that project.

Several Governmental agencies include textile research among their activities. Two of these are the National Bureau of Standards and the Department of Agriculture. Currently, the staff of the Textile Section of the Bureau of Standards is cooperating closely with the Army and Navy officers in research on such projects as improvement of textiles for military purposes. The Department of Agriculture's Southern Regional Research Laboratory, which began operations in 1941, is directing about 80% of its efforts to research on cotton and cotton seed products. At present the laboratories are engaged chiefly on war work.

The American Association of Textile Chemists & Colorists has a large research committee which is cooperating with the Government on specific projects of a military nature. Committee D-13 of the American Society for Testing Materials is active in the development of standard specifications and test methods. The Textile Division of the American Society of Mechanical Engineers has recently set up committees to carry out applied research on lubrication, lighting, vibration absorption, and similar engineering problems.

The American Association of Textile Technologists has recently started research on the correlation of textile testing methods.

Considerable research on textiles is being conducted by officers and civilian employees of the Quartermaster Corps, Army Air Forces, Chemical Warfare Service, and other branches of the Armed Services. Other research work is being carried out by colleges and other educational institutions, commercial laboratories, and individual textile companies.

**INTER-SOCIETY COUNCIL.** The Inter-Society Council for Textile Research has recently been organized to provide a clearing house for all types of research on textiles to steer new textile research problems to the agencies best equipped to handle them; and to cooperate with other research organizations and societies. Another suggested function of the Council is the maintenance of a continually revised and up-to-date list, or directory, of textile-research organizations, and of the various projects being conducted by them, or in prospect.

# WAR YEARS Set High Production Plateau

**HIGHLIGHTS:** 1943 Textile Volume Is 4.7% Below 1942, but Slightly above 1941 — 1944 Expected also to Lie Between 1941 and 1942 — Cotton Showed 6.8% Decline in 1943 — Manpower Is Industry's Bottleneck.

By
**WILLIAM B. DALL**
*Managing Editor, TEXTILE WORLD*

THREE YEARS marked by record hign textile production lie behind us. The record since 1938 shows a series of annual increases culminating at the all-time high of 1942. The three most recent years are relatively close together on the record sheet: 1942 was 5.5% above 1941 and 1943 is 4.7% below 1942.

When comparing 1943 with 1942, it should be noted that of the major branches only cotton shows lessened production. In consumption of raw material cotton accounts for nearly three times as much physical volume as all the rest of the fibers put together. The 6.8% decline in poundage of that fiber therefore over-balances the small changes in wool and rayon to give the over-all decline of 4.7%. It is interesting that rayon increased and wool held its own, while the basic trend of their great sister industry was contracting. Wool would have made a better record but for a falling off toward the close of the year, while rayon recorded a new high mark, as is its well known annual custom.

Reference to Chart I will show that the three war years, 1941 to 1943 inclusive, differing by barely 6% from low to high, have formed in effect a broad plateau. This plateau is at such high levels that no year in the 17 years between 1923 and 1940 approached it nearer than by 25%.

This plateau may be expected to continue through 1944. The relatively minor ups and downs of the last 36 months will doubtless persist, but whether the grand total for 1944 will actually be higher or lower than that for 1943 is any man's guess, as many controlling factors (such as the end of the war in Europe) are more for the crystal-gazer than the economist to forecast. The most probable event, we believe, is that 1944 production volume will very nearly duplicate 1943; certainly it is unlikely either to exceed 1942 or to fall below 1941. We expect cotton approximately to duplicate its 1943 record in 1944; wool to sag a shade below its 1943 rate; and rayon to continue its regular performance of higher levels each year.

In order to achieve so high a total level for the fourth successive year, it will be necessary for the entire industry to maintain or even to increase the pressure "to get the pounds." The fact that available man and woman power is the production bottleneck in many areas is at first glance a factor which might make for slowly declining production from 1942's high mark until the end of the war, when new developments will determine what is to be the postwar norm. Particularly does this seem true in view of the proposed draft of 1,300,000 more men this spring. We believe, however, that continued efforts by management will go a long way toward maintenance of current production levels despite the difficulties.

On the other side of the picture is

**TEXTILE WORLD'S Textile Mill Activity Index**

1923-25 average = 100

| | | | |
|---|---|---|---|
| 1929 | 115 | 1936 | 124 |
| 1930 | 89 | 1937 | 125 |
| 1931 | 93 | 1938 | 103 |
| 1932 | 83 | 1939 | 132 |
| 1933 | 104 | 1940 | 142 |
| 1934 | 90 | 1941 | 188 |
| 1935 | 105 | 1942 | 198 |
| | | 1943 | 189 |

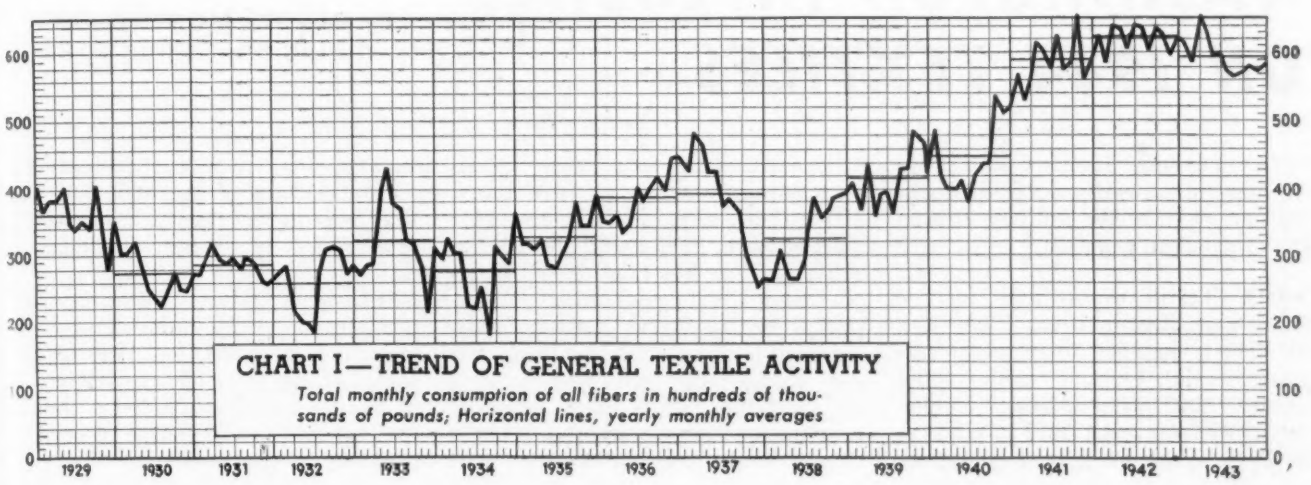



**CHART I—TREND OF GENERAL TEXTILE ACTIVITY**

*Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages*

the fact that certain munitions are already in adequate supply for 1944 and the cutback of war contracts on these items is relieving the labor market in some spots. There are ex-service men returning to civil life who are to be reabsorbed by industry. If the cherished hope of all is to be realized in a victory over Germany this spring, there will then be a definite release of war-plant labor to other fields. Japan can be beaten later with our war industries running at half-throttle. This released labor may well find work in textiles, though at lower wages than those which it has experienced recently, since domestic and export needs give indication of readiness to absorb whatever this industry can produce for many months ahead. All in all, the probability is that more persons will be employed in making textiles in the last quarter of 1944 than are so employed at present.

The fact that Col. Robert Stevens of Quartermaster General's office recently saw fit to take the industry to task for a let-down in production is clear evidence that from the Army's watch-tower, at least, are seen more needs for yardage than the industry is just now supplying. That spokesman by inference recognized certain deterent factors. These, as generally considered, are: (1) inadequate labor supply, and (2) inadequate profit incentive, due to renegotiation prospects and low price ceilings. Is it too much to hope that Army influence will be behind efforts to overcome these inadequacies in 1944?

Retail inventories of textiles are hitting a new low this spring; and, as civilian goods are allowed to become available, there will be constant support from that quarter. It is probable that only a fraction of what is wanted will be available. The export situation, including lend-lease, rehabilitation, and private channels, will absorb immense yardages in 1944 and are slated to increase considerably after the German defeat. Government agencies will see to it that proper attention is paid to this export demand.

Fortunately the textile raw materials which feed the mills in this country are, over all, in adequate supply. Cotton and wool show surpluses—though not in all grades or varieties. Rayon will be in somewhat tight supply through the year, owing to the tire program, parachute requirements, and other military needs. New textile machinery has been available only on high priority rating, such as the twisters necessary in the recent rayon tire-cord program. Old machinery may, however, be reasonably well maintained, as it is the plan of WPB to make repair parts freely available to those who need them. There is hope, therefore, that existing machinery may be kept in full production, even if not at top efficiency. There is no reason to expect appreciable increase in present installed capacity until the end of the war, although some new machinery may be available before the year closes.

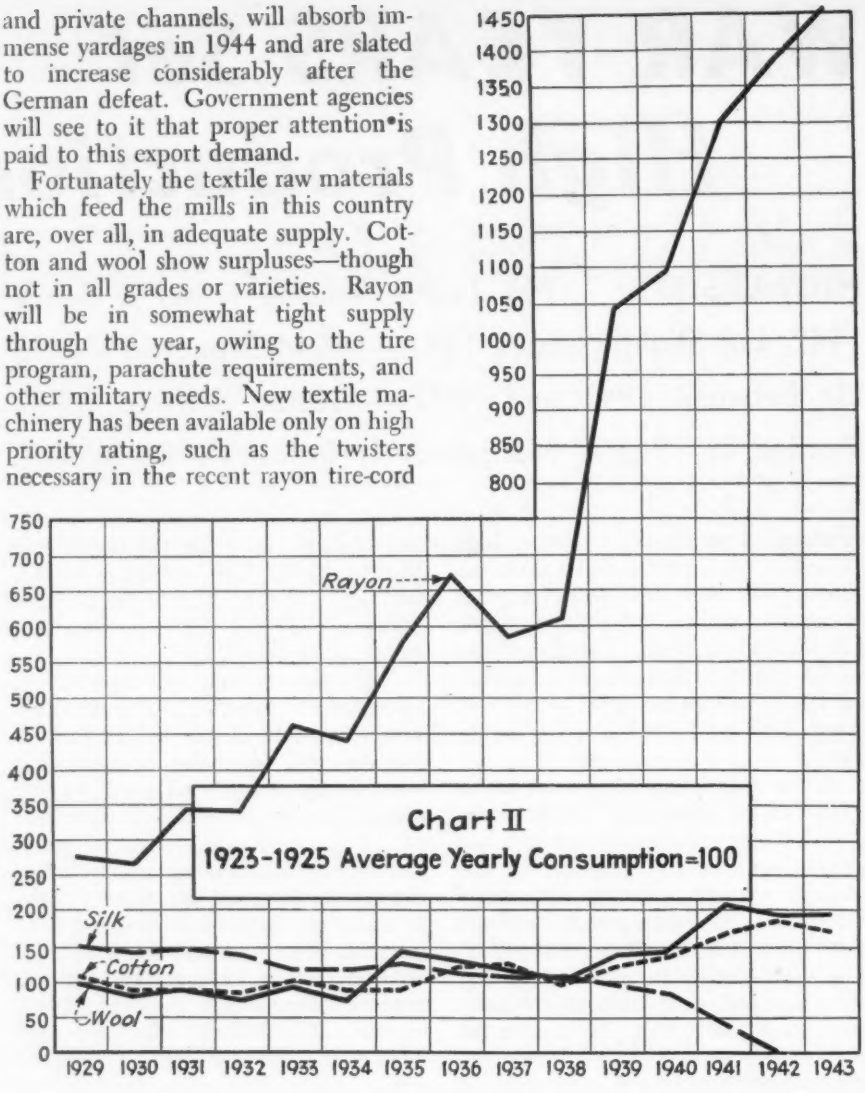



Chart II
1923-1925 Average Yearly Consumption=100

# WASHINGTON INFLUENCE ON 1944 TEXTILES

By GLADYS MONTGOMERY
*Washington Editor, TEXTILE WORLD*

THE TEXTILE OUTLOOK FOR 1944 draws much of its color from Washington. Here is the outlook as seen from the nation's capital:

**ARMY.** Textile supply lines for the Army were filled in 1943. Production in 1944 is designed to maintain adequate levels. Outlook now is that woolen- and worsted-fabric requirements will run about 60% as much as in 1943. Look for biggest reductions in the following four items: 32-oz. overcoating, as much as 70% below 1943; 18-oz. serge, 30% below 1943; wool blankets, 30% lower; and 10½-oz. shirting, 20% less than 1943. Overall cotton-fabric requirements are expected to remain at present levels, although basic cotton-fabric needs will vary considerably from past patterns for individual fabrics, with decreases in some and increases in others. Little change in the large herringbone-twill requirements. Much depends, however, on the success of operations in the next few months; heavy losses would upset Army's production schedules.

**NAVY.** Navy is fast approaching full strength. No substantial increase in personnel estimates for 1944 is expected at this time. Hence, production of textiles for Navy's account should level off on the completion of current contracts in April and May. Navy will

not estimate overall cut in production because of lack of data on wearing qualities of items under abnormal conditions. Reductions, however, will be mainly reflected in the more durable group, such as blankets and heavy outer garments. On the other hand, such items as chambray shirts, light underwear, dungarees, and socks, which wear out rapidly in use, will continue to be bought in quantity to provide necessary replacements. Contracts will be largely on a replacement basis as against heavy purchase schedules that formerly obtained when large numbers of men were being inducted each month.

**CIVILIAN SUPPLIES.** Total production of textiles for civilian clothing in 1944 is not likely to exceed 1943. Because of increased garment simplification and relaxing of wool restrictions, there may be a numerically larger volume of certain essential apparel items. Much depends on labor conditions and OPA price-ceiling adjustments. Production of woolens for civilian use will be increased if labor bottlenecks can be overcome, in part at least. Restrictions affecting civilian supply of cotton fabrics will be tight through 1944. Civilians will not have as much cotton goods as they want. Textile policymakers go into 1944 with the continued belief that clothes rationing can be avoided. There will be more mandatory orders, more restrictions on the manufacture of certain items. Department of Commerce textile officials predict that even if the war in Europe ends this year, there will be no appreciable rise in clothing stocks because demobilization is bound to be a slow process and because manpower reinforcements from this source will not be sufficient to boost production figures this year. When war ends in Europe, relief and rehabilitation needs will be large. Rayon for civilians is expected to decrease in 1944, in spite of increased production of rayon filament yarns and staple fibers. Indications are that there will be no Nylon yarns for civilian use this year.

**OUTLOOK FOR COTTON SPINNING AND WEAVING.** There is very little possibility that cotton spinning activity will improve in 1944. Washington figures indicate a drop of 7% in this branch in 1943 under the previous year. The decline in weaving activity was about the same, with no indication of any improvement here in 1944.

**OPA.** The Administration is thoroughly committed to a policy of price control. There will be a lot of pulling and hauling between now and June 30, when the Price Control Act is due to expire. In the final analysis, Congress will renew the present act or write a new one, with the former the more likely course. Policy of limited subsidies as a mechanism of price control will be continued. All adds up to textile operations under price ceilings —ceilings subject only to adjustments in individual cases, as has been the practice heretofore.

**WAGES.** It has already become apparent that a variety of pressures is proving too much for the "Little Steel" formula for wage control. The 15% level will be raised or may even be replaced by a new and more flexible set of standards. Large segments of textile labor-union leadership will continue to press for higher wages, and moderate increases are to be expected in some cases. The trend will be toward moderately higher living costs. The Administration may be expected to continue braking mechanisms on living-costs and wages as part of the overall anti-inflation fight.

**MANPOWER.** Despite the President's request for a National Service Act, the general consensus is that manpower pinch has already passed its peak in many industries. Hence we may expect that the War Manpower Commission will increase its efforts to have the War Production Board specify particular textiles and even individual mills having the greatest manpower difficulties. If WPB does this, WMC will work toward giving proper recognition to these needed textile products on the Production-Urgency List. This list, in turn, directly or indirectly determines local manpower priorities. Items that might well rise on the list, as a result of such particularizing, are yarns in general and utility fabrics, such as chambray for work shirts, denim for overalls, herringbone-twill for military and work garments, tent canvas, and certain print cloths. In the interim, WMC will concentrate on labor for textiles already high up on the Production-Urgency List, such as high-tenacity rayon for tire cord. In spite of an unofficial estimate in Washington that between 40,000 and 50,000 additional workers might be needed to carry out the ambitious program for textile production this year, it is possible that some few mills making certain specialized items may even face reconversion and unemployment problems toward the end of this year.

(*Continued on next page*)

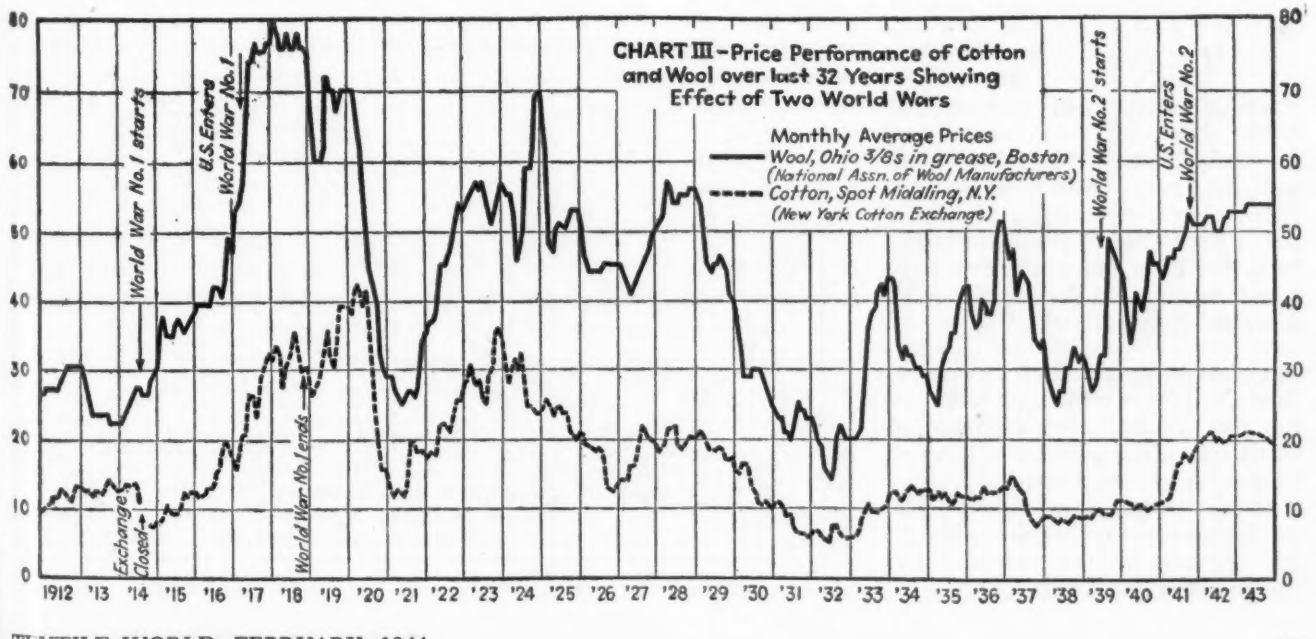


CHART III – Price Performance of Cotton and Wool over last 32 Years Showing Effect of Two World Wars
Monthly Average Prices
Wool, Ohio 3/8s in grease, Boston (National Assn. of Wool Manufacturers)
Cotton, Spot Middling, N.Y. (New York Cotton Exchange)
World War No. 1 starts
U.S. Enters World War No. 1
Exchange Closed
World War No. 1 ends
World War No. 2 starts
U.S. Enters World War No. 2
80
70
60
50
40
30
20
10
0
1912 '13 '14 '15 '16 '17 '18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28 '29 '30 '31 '32 '33 '34 '35 '36 '37 '38 '39 '40 '41 '42 '43

**TEXTILE MACHINERY PRODUCTION.** The normal resumption of textile machinery production is entirely contingent on the fortunes of war, depending on material and manpower available. There will continue to be a small amount of machinery built to relieve bottlenecks, but this will be a mere trickle. Every effort will be made to keep existing textile machinery in operation, which means having the necessary repair parts available.

**RENEGOTIATION.** The renegotiation law will be retained in its essential features—at least through this year. Some of the more drastic amendments proposed by the Senate Finance Committee will be abandoned because of pressure from the Administration and Government agencies, and also because of Congressional fear of popular reaction to possible charges of war profiteering. The provision in the Senate Finance Committee to make the exemption of standard commercial articles mandatory instead of optional will probably be abandoned in favor of the House bill's optional clause. Look for amendments along the lines of the House bill with particular stress on giving contractors right to appeal to the courts in the event of disagreement.

**CONTRACT TERMINATION AND DISPOSAL OF SURPLUS WAR GOODS.** Contract termination and disposal of surplus war goods will be defined by legislation during the year. There will be a single Government agency designated to dispose of surplus war goods. Meantime, the usefulness of the Baruch termination clause, which is now written into all new contracts, will depend largely on the way it is administered in each case by the contracting officer. It covers only one part of the termination problem, with many of the most important questions still to be answered.

**FOREIGN RELIEF AND REHABILITATION.** Prior to the end of the war, relief requirements will not interfere with necessary civilian production. Following the termination of hostilities in Europe, relief procurement will be in full force and will at that time take up much of the slack developed by Army and Navy cut-backs.

**ENCOURAGEMENT OF EXPORTS.** There will be a continuing effort on the part of interested Government officials to make public more export figures. So far indications do not point to much success. It is expected that restrictions on exports will be liberalized. Already an important move has been made in that direction.

# EQUIPMENT PURCHASES REDUCED BY WAR

FROM THE VIEWPOINT OF THE STATISTICIAN, these are strange times, even for wartimes. Perhaps never before has the textile industry consistently maintained its purchasing of replacement parts, card clothing, ring travelers, bobbins, shuttles, heddles, and other supplies at a high level while its purchases of new machinery have dropped to an extremely low level.

TEXTILE WORLD'S index today is a mean between two widely divergent forces—the supply requirements of an industry which is experiencing high activity on the one hand and the artificial regulations which prevent that industry from buying everything it needs on the other.

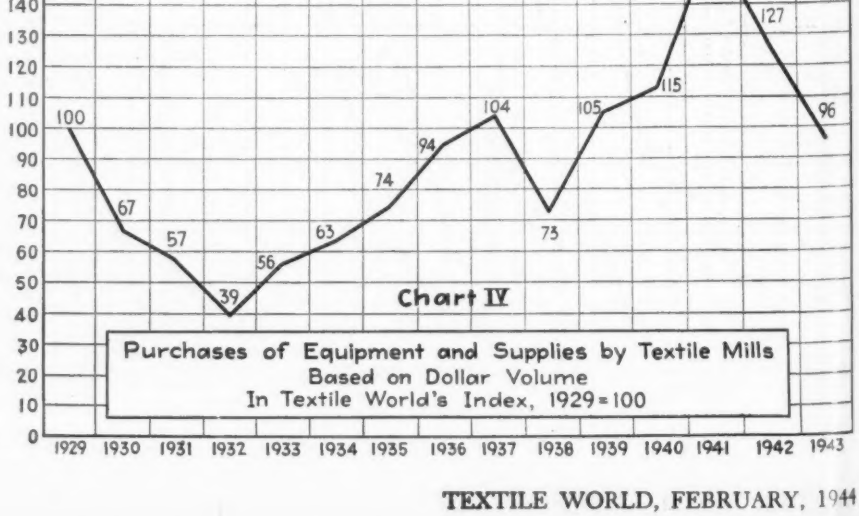
In view of the fact that purchases of textile machinery have come almost to a complete standstill within two brief years, it is interesting that the index has dropped only 40%—from 161 in 1941 to 96 in 1943. This fact simply emphasizes the tremendously important role which repair parts and supplies play in the index. In view of the general inability of mills to buy new machinery, purchases of replacement items are no doubt higher than usual; but it is necessary to remember that even in normal times the industry spends more money for repairs and supplies than for new equipment.

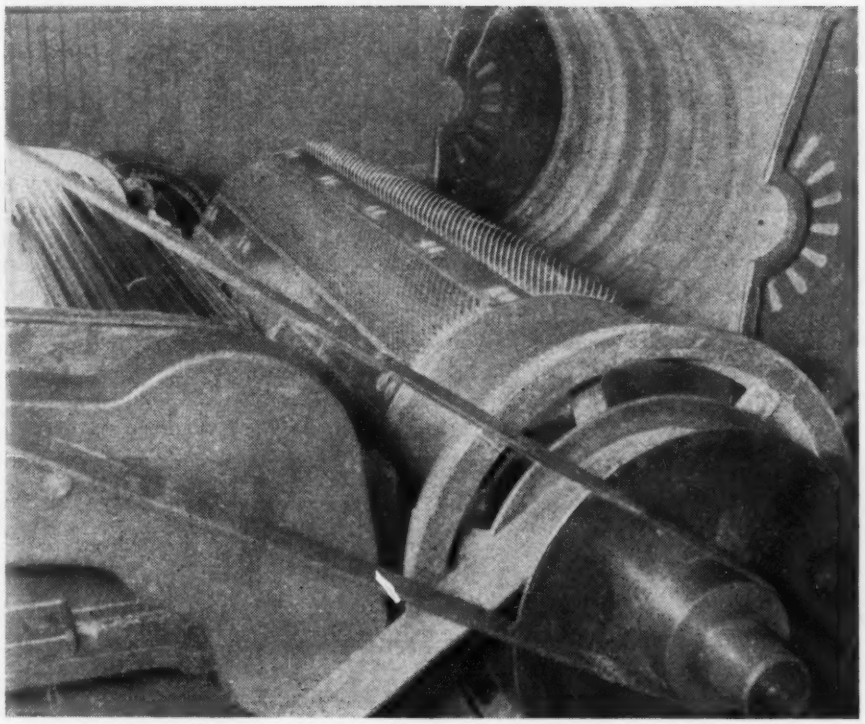
The 1943 index figure 96 is therefore no key to the productive activity or financial health of either the mills or the equipment and supply manufacturers. We know that both were exceptionally busy on war work—that there was at least no lack of activity to worry about in the case of either. The fact that currently the index figure is relatively low merely indicates that the mills, which are pounding their machines night and day and replacing practically none of them, are building up a huge need and demand for new-machinery purchases after the war.

If we segregate the purchases of supplies from the main curve, we do get a rough check on the record of textile-mill activity given in a preceding article. Supply purchases in 1943 were 93% of 1942—a drop of 7%. Chart I shows raw-material consumption to have dropped 4½% within the same period. The slight difference, 2½%, may have been the result of two factors—large inventories of supplies built up in anticipation of shortages, and the WPB rulings which limited the sizes of inventories.

The loss of textile activity was due primarily to the shrinkage in manpower during 1943; and, since there is little likelihood that production will be further curtailed for this or any other reason in 1944, there is small chance that the purchase of supplies will drop further this year. As new-machinery purchasing has already been wiped from the index, we predict that the 1944 figure will be at least 96 or better.

Indeed, the chances are very good that it will be better, since any drastic curtailment in armament production should pave the way for the building of new textile machinery.





**HIGHLIGHTS:** TEXTILE WORLD Survey Shows Divergent Practices—Higher Speeds Now Used Than Formerly Recommended.

# BEATER SPEEDS for Rayon Staple

RAYON STAPLE FIBERS are clean and uniform and, therefore, do not require the cleaning action of numerous beaters and grids as does cotton. Any excessive beating of the fibers is likely to cause broken fibers and neps. The ultimate goal in putting rayon staple through the opening and picking machinery is to form a good lap for the card with the least damage to the staple. To do this, only those processes required to open and blend the fibers and to form the lap should be used. In a mill designed to run only cotton, this often necessitates the cutting out some of the machines used to process cotton or the setting up of a special line of machines for the rayon staple.

**FORMER PRACTICE.** A picker-room setup recommended in TEXTILE WORLD in 1937 for a picker room on 1½-den., 1½-in. viscose rayon staple was as follows: Maintain the picker room at a relative humidity of about 60% r.h. at 70° F. The staple should be fluffed for 24 hr. whenever possible before running through openers and pickers. Use a bale opener and single process picker equipped with double beaters of the Kirschner type with beater speeds of 500 r.p.m. and a fan speed of 1,000 r.p.m. The grid bars should be set at ⅛ in. and a 12-oz. lap produced. The fan speed may be varied to bring the material to the cage in the proper form. Also, 4 to 6 ends of roving may be run in at the calendar roll to prevent the lap splitting. Front cleaning bars should be covered and grid bars left open.

Today, various deniers, staple lengths, types, and blends of rayon staple fiber are being used. Further, several different types of beaters are employed. It appears probable, therefore, that there is no one beater speed which is the best under all conditions.

**MILL SURVEY.** To determine present practices as regards beater speeds in plants handling rayon staple fiber on the cotton system, TEXTILE WORLD recently conducted a survey in 10 cooperating mills. The results of this survey are summarized in the accompanying table. Although these data do not include all deniers, lengths, and types of rayon staples and blends being run on the cotton system, they do cover a fairly wide range.

A range of beater speeds of from 300 to 1050 r.p.m. can be noted. This wide range is due to the use of a large 40-in. spiked beater at 300 r.p.m. by one mill out of the ten reporting. If this beater is eliminated, the range is narrowed to 550 to 1050 r.p.m. for rayon staple in deniers of from 1½ to 5½, and staple lengths of from 1⅛ to 2 in. Further analysis shows the speed of 550 r.p.m. is used for a 20-in. Buckley beater and is reported for only one mill. If the Buckley beater is eliminated also, the range of beater speeds is further narrowed to 660 to 1050 r.p.m., with speeds of 900 to 1050 r.p.m. being used in the majority of instances.

Carding and Kirschner beaters are employed more frequently than any other types. This apparently is due to the necessity of opening the fibers with as gentle an action as possible. The same reason probably accounts for the fact that no mill in the group surveyed uses beater speeds higher than 1050 r.p.m.

Types of beaters reported as used are the carding or Kirschner, the porcupine or Buckley, pin, spiked, and blade, with the carding or Kirschner beaters having the preference. Beater diameters reported vary from 16 to 40 in. Only one mill out of the ten uses a blade beater, which is probably a good indication that the gentler-acting carding or Kirschner beater has been found to be more suitable for handling rayon staple.

**OPENING AND PICKING SEQUENCE.** Single-process picking is used in seven of the mills, which shows a preference for this arrangement. The sequence of opening and picking machinery varies considerably, indicating a definite need for more study on mixing, opening, and blending processes. Mills on blended rayon that expect to cross-dye their fabrics use more thorough blending in the processes before picking or else use two processes of picking so as to be able to get the extra blending from the four laps back of the finisher

picker. Machines used in the processes previous to the picker are: hopper feeder, two-bale breakers in tandem, centrif-opener, and beater opener. Floor blending was specified in only one mill.

**FABRICS, STAPLES, DENIERS.** Fabrics on which data were given were all in the apparel field, such as suiting, chambray, shirting, shantung, and linen-type fabrics. Yarn numbers ranged from 14/1 on a linen-type fabric to 36/1 on a chambray. Four of the ten mills make yarns of acetate-viscose blends; five mills run straight viscose or blends of two deniers of viscose; and one mill runs acetate, viscose, and blends. The most popular staple length is $1\frac{5}{16}$ in.; other staple lengths used are $1\frac{1}{8}$, $1\frac{1}{2}$, and 2 in. In two mills extra-strong staple is used for an 18/1 nubby filling and a 30/1 plain filling. Deniers range from $1\frac{1}{2}$ to $5\frac{1}{2}$, the 3-den. acetate is the most popular choice for use with viscose of $1\frac{1}{2}$, 3, and $5\frac{1}{2}$ den.

Among the conclusions which can be drawn from this survey, is the fact that present practice is to use higher beater speeds than were deemed advisable a few years ago. That is, experience apparently has shown that it is possible with Kirschner beaters to use speeds as high as 900 to 1050 r.p.m. without excessive damage to either viscose or acetate rayon staple. On the other hand, lack of standard procedures indicates the need for further study and experiments to determine the proper beater speeds with various types of beaters for each fiber and blend run.

**Beater speeds used in 10 mills on rayon staple fiber and blends on the cotton system.**

| | Mill No. 1 | Mill No. 2 | Mill No. 3 & 4 | Mill No. 5 | Mill No. 6 | Mill No. 7 | Mill No. 8 | Mill No. 9 | Mill No. 10 |
|---|---|---|---|---|---|---|---|---|---|
| Yarn No. | — | 18/1 nubby rayon filling | All Types | 36/1 | 20/1 & 15/1 | 30/1 warp 24/1 filling | 30/1 | 14/1, 18/1 30/1 | 20/1 & 30/1 |
| Fabric | Suitings | Shantung | Women's Wear | Chambray | Wearing Apparel | | Fugi—spun Rayon Filling | Linen Type, Shantung-Fugi | Men's Wear Suiting & Shirting |
| Acetate or Viscose | Acetate & Viscose Blend | Viscose | Acetate & Viscose Blend | Viscose | Viscose | Viscose | Acetate & Viscose Blend | Viscose | Acetate, Viscose, & Blends |
| Staple Length-Inches | 1½ | 1 5/16 | 2 | 1 5/16 | 1 5/16 | 1 5/16 | 2 & 1⅞ | 1 5/16 | 1⅛ |
| Denier | 3* & 5½ | 1½ & 3 | 3 | 1½ | 3 & 1½ | 1½ | 3* & 1¼ | 1½ & 3 | 1½ (Also 3 & 5) |
| Dyed or Undyed | Undyed | Undyed | Undyed | Undyed | Undyed | Undyed | Undyed | Undyed | Undyed |
| Other Rayon Specifications | | Extra-strong Staple, Rayon Nubs Added. | | | | | Extra-strong Viscose Staple | | |
| Processes of Picking | Two | One | One | Two | One | One | One | One | One |
| Sequence of Opening and Picking Machines | Breaker & Finisher | Hopper Feeder, Two-Bale Breakers in Tandem; Buckley Beater Opener to Picker (Single Process Pickers are 2-Beater Machines) | Floor Blend, Hopper Feeder, Single Process Picking | Breaker as follows: Hopper, 40-in. Spiked Beater; Carding; Finisher; Carding | | Hopper Feed to Breaker; Centrif-Opener; Picker | Opening Feeder and Beater Opener; then a Single-Process Picker—(2 beater) | | Opening and then through Special S-L (Tinted at Opener.) |
| Type Beater: | | | | | | | | | |
| 1. | Spiked | 20-in. Buckley | Carding | 40-in. Spiked | Kirschner | Porcupine | Kirschner | Pin | Pin |
| 2. | Kirschner | 16-in. Buckley | Carding | Carding | Kirschner | Blade | Kirschner | Kirschner | Pin |
| 3. | — | 16-in. Kirschner | Carding | Carding | — | Kirschner | — | Kirschner | — |
| Beater r.p.m.: | | | | | | | | | |
| 1. | 700 | 550 | 925 | 300 | 660 | — | 850 | 900 | 750 |
| 2. | 1050 | 1050 | 925 | 950 | 774 | — | 850 | 900 | 750 |
| 3. | — | 750 | 925 | 980 | — | — | — | 900 | — |

*Acetate

# Three Methods for Making WOOL CREPE YARNS

**HIGHLIGHTS:** Selecting Twists for Singles, Z-on-S, and Z-on-Z Types—Choosing Stock—Avoiding Snarls

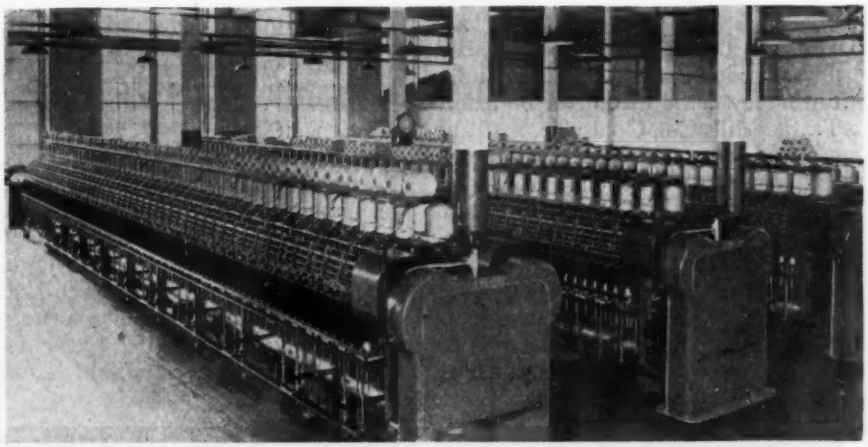
**By S. KERSHAW,** F.T.I.

HARD-TWIST YARNS and crepe yarns used in the weaving of sand crepe and other worsted crepe fabrics present unusual production difficulties which are not ordinarily encountered with yarns containing the normal range of twist. Excessively twisted yarns behave differently, their behavior varying according to the treatment given them. Also, wool fibers of different character vary from each other in their reactions to twist.

Ranging between the ordinary twist yarn and the crepe yarn, there have been developed during recent years a large number of hard-twisted yarns for use in a wide range of fabrics, of which poplins, repps, charmalaines, royals, and voiles are typical examples. Without suitable stock and correct processing in combing, drawing, and spinning, the high-class yarn demanded for such fabrics will not result. Even-running yarn is necessary for these purposes, as irregularities are exaggerated when extra twist is imposed.

The cost of making these yarns is fairly high. First, good quality tops are used, free from blemishes and of good average length of fiber. Part of the lot is tinted to distinguish it from other plies, and twists. Again, the large number of turns of twist required in such yarns slows up production and makes the yarn expensive. A hard yarn, however, is more easily obtained by adding twist on twist than by trying to obtain a hard yarn by twisting in the opposite direction to the spinning twist.

**TWIST ON TWIST.** In the following examples, it will be seen that stock quality, twists, and yarn contraction all must be considered in the production of crepe yarns. For example, a manufacturer desires a 2/48s crepe yarn, twist on twist, or Z on Z. The contraction in twisting may exceed 20%, necessitating the spinning of a 1/60s yarn. This 1/60s yarn, if spun with the normal amount of twist for such a yarn, will require a top above the average quality normally required for spinning a 48s yarn.



***The draft in spinning has to be increased in proportion to the contraction in twisting, often necessitating the use of a very light weight of roving to avoid excessive drafting.*** *Photo courtesy of Whitin Machine Works.*

In the manipulation of this class of yarn, it is best to consider crepes as fancies or novelty yarns, and not as common yarns, or those which respond to the ordinary rules laid down for spinning, twisting, and weaving. Here is a class of yarn very prone to snarl. Hence, special attention must be paid to tension, both in spinning and in twisting.

**SINGLE CREPE YARN.** In spinning singles crepe yarn, the yarn spun will be heavier in count than calculated and will be harder in twist. For example, it is required to spin 1/24s crepe yarn with 25 turns per in. First, make a sample of 1/24s with a normal twist, say 9¼ turns per in. and spun with 5% allowance for contraction, that is, to 25¼s. Next, change the twist gear to put 25 turns per in. into the yarn, and spin a sample to test for counts and twist. The results will be counts, 1/22s; and twist, 28¼ turns per in. These results are caused by contraction of yarn under the influence of twist. Change the draft and twist to spin 25¼s with 25 turns per in. For this the calculated count will be about 28¼s and the twist 22 turns, but the actual counts and twist will be as required. The change in counts and twist in the yarn takes place after it has left the front roller.

**Z AND S METHOD.** Crepe yarns are also made in the twisting process by the Z and S method, that is, by twisting in the opposite direction to the spinning twist. The extra twist put into the two-ply yarn causes the yarn to contract; this changes the count and twist of the two-ply yarn. The Z-twist is put in at the spinning frame, and the S-twist in twisting. Let us assume an example—an order is received for 2/48s crepe yarn. By preliminary testing it is found that the 30 turns of twist wanted in the yarn causes a contraction of 10%. The 48s yarn would be spun to 50¼s (5% light for contraction), and it will be necessary to spin the yarn to 56s if the two-ply when twisted has to equal in weight 48s. It is also essential to change the twisting twist and put 27 turns in instead of 30 per in. After making these changes, tests and minor adjustments may be made to obtain further accuracy.

**HANDLING PLY YARNS.** Crepe yarns made with plied Z on Z twists are fairly common, and it is with this class

(*Continued on page* 120)

# How Joanna Mills Reduced COTTON-MILL WASTE

**HIGHLIGHTS:** Steps Taken to Reduce Waste in Carding and Spinning—Method Used for Recovering Usable Fiber—Use of Waste Yarns in Osnaburgs and Slasher Blankets

REALIZING THAT EXCESSIVE WASTE in any department is reflected in lower production and higher manufacturing costs, the executives of Joanna Textile Mills Co., Goldsville, S. C., began a few years ago to make a thorough study of the waste problem in their plant. As a result of this investigation, they have taken several steps which have reduced the amount of waste made in the card room, spinning room, weave room, and other departments. Furthermore, they have found ways for utilizing in manufactured products all waste with the exception of hard slasher waste and dirty, greasy waste.

**REDUCING WASTE.** Substantial reduction in amount of waste at the cards was accomplished by running regular monthly tests on card strips and on fly and motes under the cards, and then resetting the cards found on the high side of the waste standard. Addition of the new Saco-Lowell solid screen has also resulted in a waste reduction. This is attributed to the rigid construction of the screen, which holds its settings better than the old type, and to the fact that static is reduced because of the insulating qualities of the screen which reduces static, thus preventing the cotton fibers from standing on end and being knocked off as fly. Continuous strippers have also been added to a larger number of the 219 cards, and this has resulted in additional waste reduction because the cards are not stopped for stripping until the week end. Also, less waste was found on top clearers following these changes at the card. Incidentally, continuous stripping gives an additional saving, aside from the waste reduction, because of the increased production of cards formerly stopped because of conventional stripping methods.

Installation of revolving type top clearers on slubbers, fly frames, and spinning frames resulted in less clearer waste. This is attributed to the fact that the revolving type clearer moves with the stock with no brushing or combing action to create static, which in turn would remove additional fibers.

Percentages of waste of various types made before the waste-reduction program was instituted and after it had been put into effect are shown in the accompanying chart. Total waste—excluding bagging, ties, and buckles—was reduced from 11.32 to 9.56%, or 1.76%. As Joanna consumes approximately 1,000,000 lb. of cotton a month, this represents a saving of about 17,600 lb. of cotton a month, and a corresponding increase in amount of yarn produced.

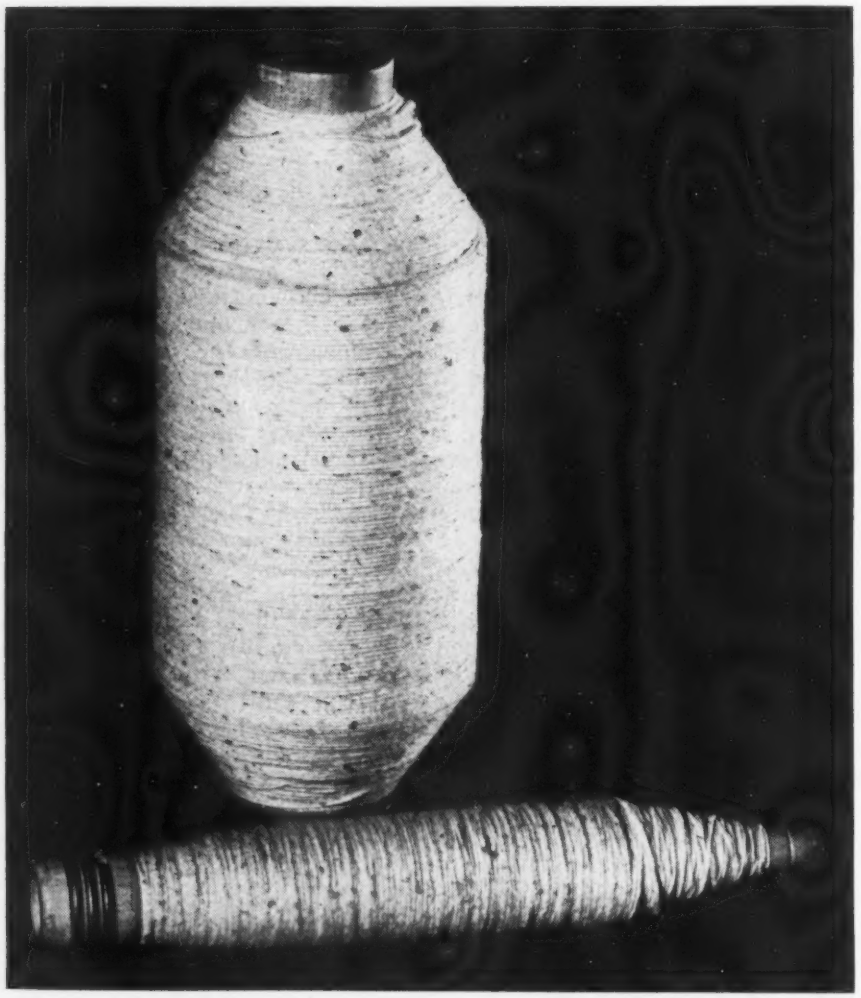


*Fig. 1. Speeder bobbin on which waste yarn is spun and a quill of the same yarn.*

**UTILIZATION OF WASTE.** Waste is utilized by recovering all usable fiber, and then blending various amounts into yarns. The fly and motes under the pickers and cards are run through a card and picker waste cleaner to take out all good stock, which comes out as a bat. Thread waste and clearer waste are garnetted in the five-beater hard-waste machine, and the mixes are made up and run through two processes of picking to insure thorough blending of

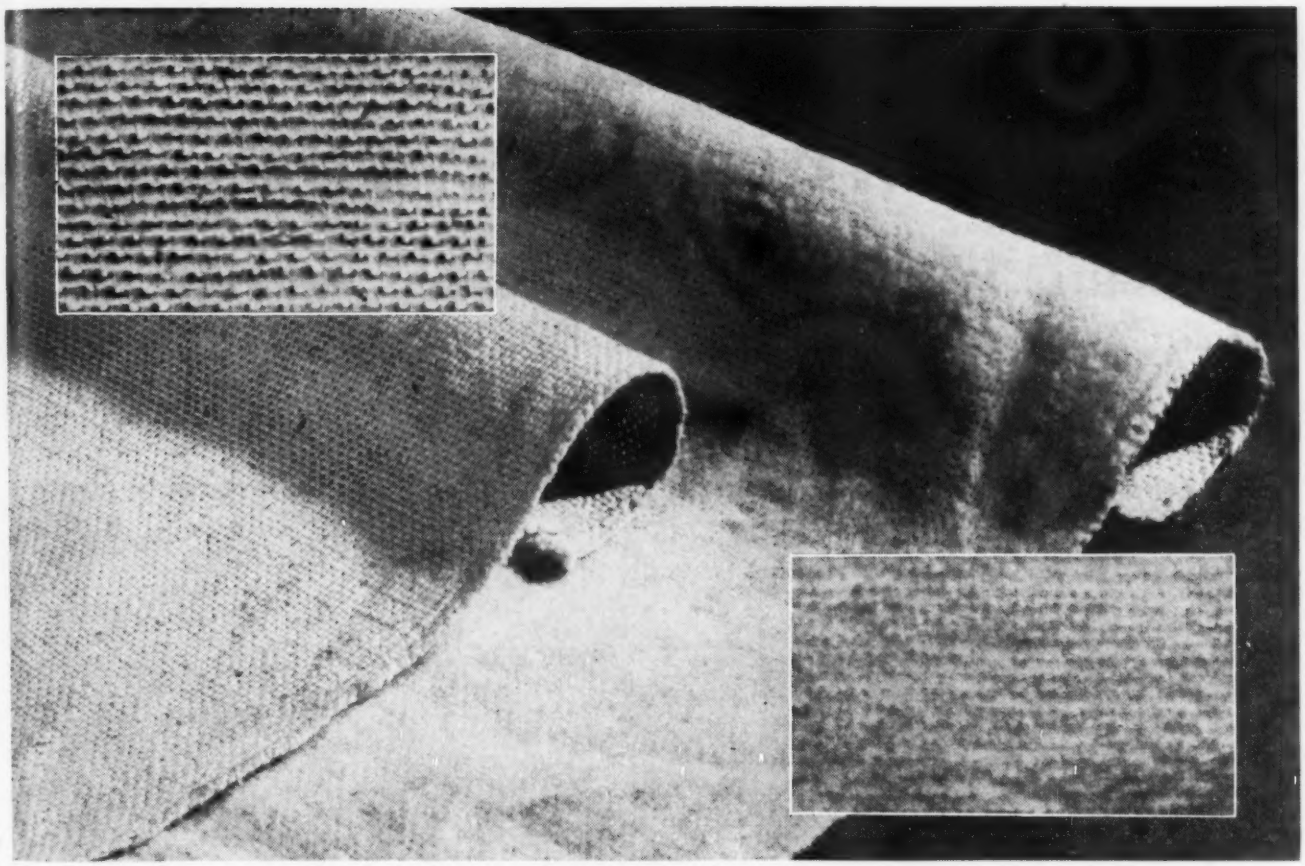


*Fig. 2. Samples of gray and napped slasher blankets made from waste.*

the mix. If it is not properly blended at this operation, a lumpy, uneven yarn will result.

Laps made of those blends are run through one process of drawing, and conventional slubbers, and are made into yarn on a 8x3½ intermediate. A twist multiple of 3.3 is used at this intermediate to give the required strength. Filling in 2.25 to 2.50 h.r. is made from this for weaving bale coverings.

Other stock is processed into 1.50 h.r. to be used both as warp and filling for a cotton slasher blanket developed by Joanna.

This cotton slasher blanket is made by sizing the warp roving on the slasher just enough to weave, and then weaving it on a plain loom with the same yarn for filling. The construction is 62 in., 14x14, weighing 0.7 yd. per lb.

To make it unnecessary to use muslin next to the squeeze roll, the goods are napped lightly on one side. This napped side is wrapped on the outside when it is placed on the roll. Fifteen yards of cotton blanket is used for each roll, and the life of the blanket is from 8 to 12 weeks. The executives at Joanna estimate that they save approximately $500 a year per slasher by using the cotton blanket instead of regular woolen blankets.

## RESULTS OF WASTE-REDUCTION CAMPAIGN

at Joanna Textile Mills shown by comparison of percentages of waste for four weeks in September, 1940 and four weeks in December, 1943

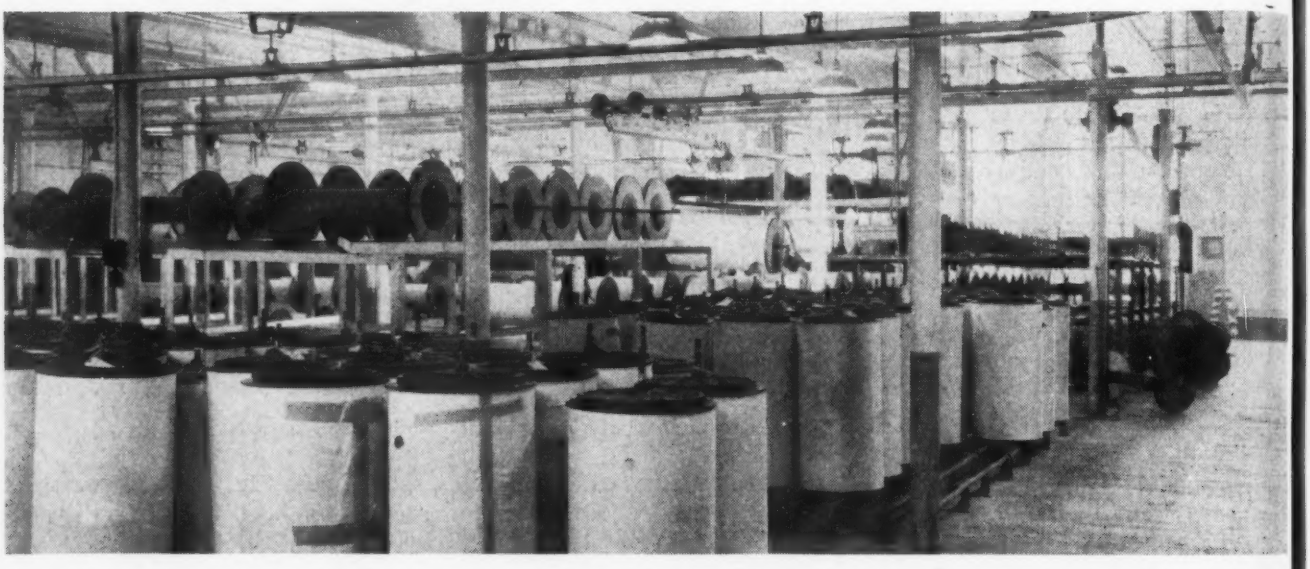
| | 1940 | *1943 | Reduction |
|---|---|---|---|
| **Card Room Total** | **7.55%** | **6.55%** | **1.00%** |
| Vertical Opener Motes | 0.31 | .... | 0.31 |
| Murray Opener Motes | 0.48 | 0.63 | 0.15+ |
| Picker Motes | 1.31 | 1.42 | 0.11+ |
| Picker Flyings | 0.04 | 0.03 | 0.01 |
| Card Flyings | 1.37 | 1.12 | 0.25 |
| Card Strippings | 3.55 | 2.67 | 0.88 |
| Sweepings | 0.33 | 0.37 | 0.04+ |
| Clearer and Dust Rolls | 0.16 | 0.31 | 0.15+ |
| **Spinning Room Total** | **1.12** | **0.97** | **0.15** |
| Clearer | 0.15 | 0.11 | 0.04 |
| Filling Thread | 0.26 | 0.27 | 0.01+ |
| Sweepings | 0.71 | 0.59 | 0.12 |
| **Warping Department** | **0.97** | **0.75** | **0.22** |
| Spooler Thread | 0.15 | 0.28 | 0.13+ |
| Slasher Soft Thread | 0.09 | 0.07 | 0.02 |
| Slasher Sized Thread | 0.38 | 0.22 | 0.16 |
| Drawing-in Thread | 0.24 | 0.10 | 0.14 |
| Sweepings | 0.11 | 0.08 | 0.03 |
| **Weave Room Total** | **1.29** | **0.97** | **0.32** |
| Filling Thread | 0.37 | 0.26 | 0.11 |
| Sized Thread | 0.12 | 0.06 | 0.06 |
| Sweepings | 0.80 | 0.65 | 0.15 |
| **Cloth Room Total** | **0.39** | **0.32** | **0.07** |
| Bags | 0.33 | 0.29 | 0.04 |
| Sweepings | 0.06 | 0.03 | 0.03 |
| **All Departments** | **11.32** | **9.56** | **1.76** |

**Note: At time these figures were obtained out of a total of 219 cards, 180 were equipped with continuous strippers and 60 with the new type screen.*

# BEAM-HANDLING SYSTEM Saves Manpower and Time

**HIGHLIGHTS:** Tramrail and Hoists Serve Twisters, Warpers, Slashers—Installation in Southern Plant Will Pay for Itself in a Year—Transfer Device Speeds Work.

By FRANCIS A. WESTBROOK



***General view of an important section of the system. Note the proximity of the storage racks to the slashers which are in the center background.***

*Photographs courtesy of Cleveland Tramrail Co.*

SAVINGS IN MANPOWER, floor space, and time have been effected in a progressive southern cotton mill through the installation recently of an overhead system for handling beams. It is expected that the system will pay for itself in about a year under present high-production conditions. The system is complete in that it provides for the mechanical handling of section beams for twisters, warpers, storage and slashers.

By referring to the layout on the opposite page, it will be seen that the machines associated with the use of beams are so arranged with respect to one another, and to the beam storage space, that the overhead handling and transportation system lends itself to efficient operation. Thus, the warpers and twisters are at one end of the line, and the slashers at the other end, with the weigh scale and storage space between.

When a beam from storage is needed for one of the slashers, it is picked up by means of the electric hoist on the transfer bridge shown in Fig. 1. The bridge, with its load, is then pushed opposite the overhead track serving the slasher which is needing a full beam, and the load is transferred directly to this track and thence to the slasher creel. The arrangement of tracks for the transfer bridge and track serving the slashers, can be seen in the upper right of the picture.

From any location beams can go to the tramrail track scale shown in Fig. 2. This makes it a simple matter to weigh all beams as they come from the warpers, without any extra handling, and with a minimum loss of time. The photograph shows how the weighing equipment is used.

The warpers with the overhead tramrail can be seen in Fig. 3. In the background an empty beam is being placed in the machine by means of the electric hoist. The beam in the warper in the foreground is not yet full.

Fig. 4 shows a filled beam being placed on the twister, after being taken from storage. The warpers and twister are served by separate overhead rails which join, as shown in the diagram between Fig. 2 and Fig. 3.

From the scale, the track makes a right-angle turn and passes along the racks where beams are stored for transfer to the slashers. Another part of the track continues in a straight line for taking beams directly to the slashers. This is particularly convenient when the racks are full, or to avoid a handling operation. It also provides for quick transfer of empty beams back to the warpers and twister.

In the general view seen at the top of this page, the incoming end is shown in the foreground. Back of the racks can be seen the transfer bridge with the traveling hoist. In the picture a beam has just started on the track to a slasher. The transfer bridge makes it possible to take a beam from any part of the rack and deliver it to any slasher. Conversely it is equally simple to remove an empty beam from any slasher and place it on any rack with a vacant space, or to send it directly back to the warpers or twister.

The photographs show that the stor-

age racks have three levels. The top level is used for empty beams, as it is convenient for quick and frequent moving of these items. When a filled beam is taken from the rack at the end nearest the slashers, those behind are rolled forward. This makes room at the other end of the rack for beams coming in for storage. It also provides for taking beams to the slashers in the order in which they are made up at the warpers and twisters.

The traveling hoist is easily pushed along by hand. Conveniently placed electrical outlets have been provided for the operation of the hoist at all points where it is used. This has kept the installation expense of electrical equipment—which is under the heading of critical war materials—down to a minimum, without detracting seriously from the efficiency of the handling system.

An outstanding feature of this handling equipment is that it is not using valuable floor space and eliminates cluttering the floor with dollies, carts, or lift trucks. Its height enables it to clear most obstacles. It gives the effect of straight-line production.

**Track plan with photographs superimposed shows how tramrail system is laid out and used. Slashers are stationed just beyond the storage racks as indicated by first of several tracks marked "To slasher".**

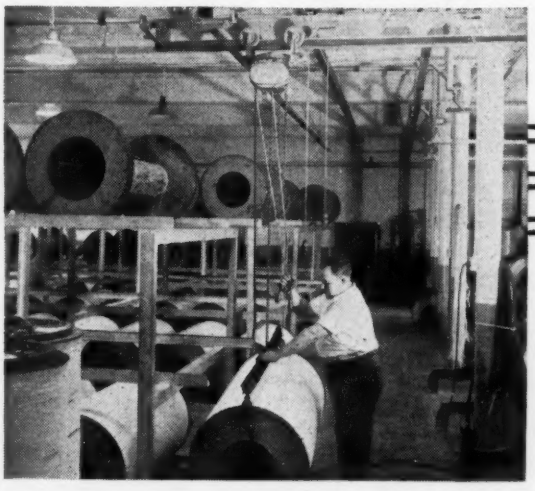


*Fig. 1. Removing a full beam from storage rack for delivery to any slasher.*

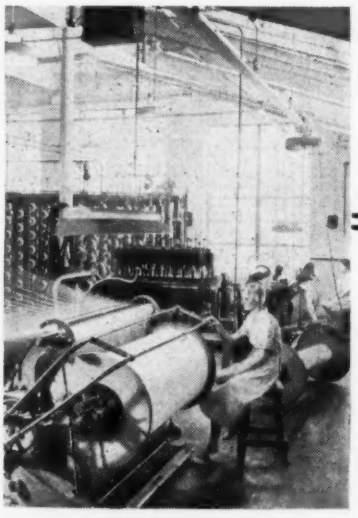


*Fig. 3. Tramrail used to handle empty and filled section beams at warpers.*

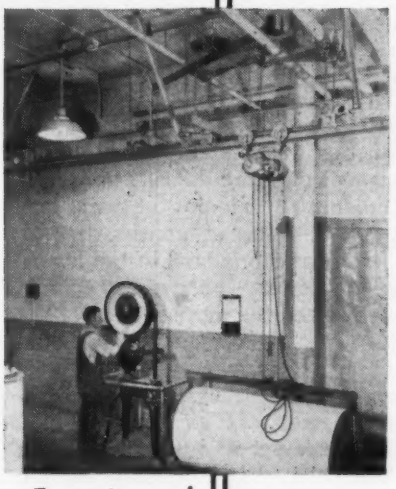


*Fig. 2. (Right) Track scales for weighing. No extra handling of beams required.*

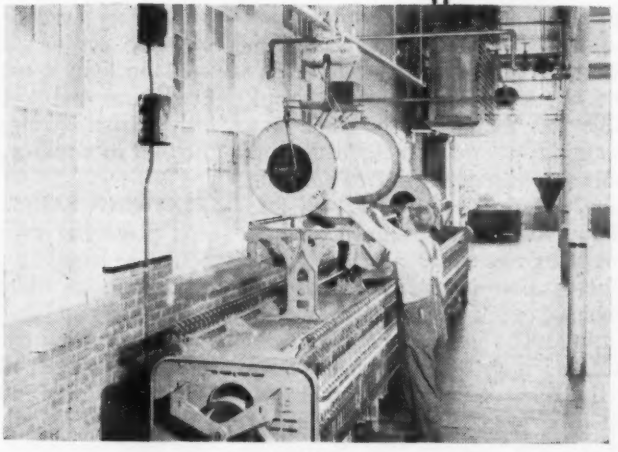
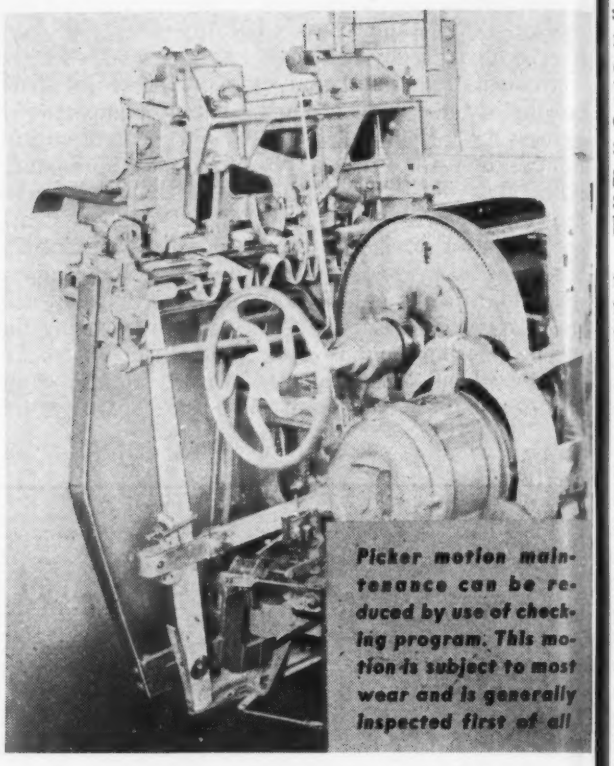


*Fig. 4. (Right) Loading beam twister is an easy job using this system.*

# RAYON LOOM Maintenance

By ARTHUR C. WAYMAN

**HIGHLIGHTS:** What to Do when Warps Are Out—Warp-Out Check Chart —Inspection Suggestions—Importance of Lubrication and Lubricants — Replacement Analysis Shows High-Cost Units.



*Picker motion maintenance can be reduced by use of checking program. This motion is subject to most wear and is generally inspected first of all*

PRESENT CONDITIONS make the maintenance of rayon looms of utmost importance for two reasons at least: all production possible is needed, and replacement parts are difficult to obtain. On modern rayon looms the warps may run as long as several months, depending upon the fabric, and so the logical time to employ preventive maintenance is when the warps are out of the looms. Properly carried out this should result in a net saving of time and a higher weave room efficiency. In addition, any items which can be corrected while the warp is out of the loom should enhance the quality of the cloth.

In some mills the amount of checking which is done at this time is quite detailed, and to guide the various crews which work on the looms, complete check lists are being provided. The loom check chart illustrated was developed from information appearing in this article, and is merely offered as a guide, as scarcely any two plants would handle this matter in the same way. Although it is hard to include all items on any list, principally due to new ones arising, a form of this type will forestall the possibility of known essential items being missed.

There is nothing of more importance in maintaining a loom than proper lubrication. The importance of utilizing a lubrication chart, and properly training the oiler, cannot be over-emphasized in view of the poor instructions usually given and the poor manner in which this job is often performed. Of course, lubrication is needed during the running of the looms, but when the warp is out it is particularly important to see that no parts are wearing excessively due to the lack of lubrication. At this time all fittings and oil holes should be cleaned and be made to operate correctly.

**ROUTINE TO FOLLOW.** Usual procedure is to clean the loom thoroughly as soon as the warp has been taken out, then to lubricate it, and finally to check it carefully, and overhaul if necessary. At this time any parts subject to wear, or that might fail, should be inspected. It is often wise to replace parts before they fail. On one hand is the need to conserve parts, and on the other the need for production that might be lost by waiting until a part completely fails. Frequently, a part that is removed before failing can be repaired easily, whereas if allowed to run too long it may not only damage itself irreparably but also may ruin other parts. Comparative figures are helpful in striking a balance here.

**RENEWING PARTS.** At least one modern plant has evolved a replacement schedule based in part on micrometer measurements of items subject to wear, and in part on the life expectancy compared to the hours run. This may seem complicated, but the proof of its value has been proven in this case by reduced over-all maintenance cost and increased machine efficiency.

Returning to the check-up proper, perhaps the picking motion, which is the hardest working mechanism on the entire loom, should be inspected first. Check the amount of sweep, timing of pick, setting of picker shoe, etc. The filling fork (center fork) causes frequent cloth defects such as broken picks, starting marks, etc. It should receive unusually careful attention. The head motion should also be included in this general inspection. During this task the loomfixer should be alert and watch for places which the oiler may have failed to lubricate.

While the loom is being serviced, the shuttles can be gone over by the shuttle fixer. Remove all nicks and cuts, and clean the shuttles thoroughly. Gage the entire set so all are of equal size. Where fur is in fairly good condition, a good brushing with a brush made of carding cloth will revive its life.

**SALVAGE OF PARTS.** If shuttle pins, rings, or porcelain eyes appear to be cut, replace with new ones, but do not necessarily discard the old. They should be examined for possible utilization for another purpose or construction, perhaps at a later date. If the shuttle fixer notices any particular marks on the shuttles, such as a splintered back near the tip or a washboard effect, such facts should be reported to the loomfixer at once. He, in turn, can apply the proper remedy to prevent a recurrence of the damage.

After the new warp is mounted in the loom, several items should be ob-

served carefully. Be sure dobby cords run straight over the sheave rolls. In other words, a sight line from the dobby knife over the respective sheave roll down to its harness shaft should be straight. Reed and reed supports, together with box backs, should form a straight line. The same applies to box bottoms and the race plate.

It is necessary in some mills to keep the box bottom slightly higher than the race plate, as when a ruling exists that the bottom shed of the warp must clear the lay by 1/16 in. In other words, the boxes are lined up with the bottom shed of the warp.

**BINDING AND POWER.** When starting the loom, watch the boxing of the shuttles carefully. Too much pick or insufficient binding will cause the shuttle to rebound. At times too much power causes unnecessary strain upon the entire picking assembly. This will mean frequent replacements of picker sticks and pickers, together with bumper straps—maintenance costs which, by careful and proper adjustment, can be reduced drastically.

The fabric which the loom is to weave when it is restarted should be known. It may be an exceedingly heavy construction which calls for high warp tension. When such a style is run on a dobby loom, it necessitates a great amount of power to pull the shafts down for a clear shed. Mills which have the compensating pull-down jacks underneath the loom—where the tension of the springs is the greatest when the shaft is down, and lightest when the shaft is up—will not have any difficulty. However, plants which employ a pull-down spring secured to the floor, or to a loom bracket on the one end, and hung onto a screw eye on the shaft on the opposite end, will find the greatest pull when the shaft is up; i.e., just opposite to the method explained first. This exerts a great strain upon the dobby. In such cases it is advisable to hook each shaft on two dobby jacks using two hooks. Of course the design must be pegged accordingly. In such cases, a four shaft taffeta, instead of using only 4 hooks, uses eight. Thus, shaft one would be pulled by hooks one and two, etc. This system will save considerable wear and tear on the dobby.

**REPLACEMENT RECORDS.** When a loom requires a new part, regardless whether it is a casting, a picker, or a piece of leather, it is a good policy to surrender the worn or broken part in exchange, for possible salvage and for recording. An accurate record should be kept of the frequency of replacements in comparable weaving sections. A weekly or monthly analysis of this record sometimes will reveal that certain sections are afflicted with a veritable epidemic of some particular trouble. For example, one section may call for twice the average number of pickers. This immediately shows that corrective action is needed.

One of the most abused articles found when checking a loom is the bolt with its washer and nut. All too often these parts are used for edge weights, or for numerous other purposes for which there are standard parts. The substitution is made for convenience. There should be a weekly, and if necessary a daily, inspection under all looms to make sure that usable parts are not hidden away, particularly those made of metal as these are currently very difficult to replace. Conservation of all materials is important.

Although the foregoing maintenance program is based on rayon looms, the principles used can apply to any looms.

MILL_____ Weaveroom_____

Time Out — Time Restarted

Date_____ Date_____

Hour_____A. M._____P. M. Hour_____A. M._____P. M.

## Warp-Out
## LOOM CHECK CHART

| | ITEM | Initial Proper Space: O.K. | Repaired | Replaced | REMARKS |
|---|---|---|---|---|---|
| Picking Motion | Picking Motion Sweep | | | | |
| | Timing of Picking Motion | | | | |
| | Setting of Picker Shoe | | | | |
| | Picker | | | | |
| | Bumper | | | | |
| Shuttles | Shuttle Fur | | | | |
| | Shuttles Matched | | | | |
| | Shuttle Tension (Cut? Grams?) | | | | |
| | Shuttle Smoothness | | | | |
| Dobby | Dobby Cords Straight | | | | |
| | Dobby Head | | | | |
| | Pattern Chain | | | | |
| | Filling Fork | | | | |
| | Boxing | | | | |
| | Filling Feeler | | | | |
| | Transfer Mechanism | | | | |
| | Warp Alignment | | | | |
| | Warp Tension | | | | |
| | Reed Alignment | | | | |
| | Boxing Mechanism | | | | |
| | Lay Motion | | | | |
| | Pick Gear | | | | |
| | Harness Level | | | | |
| | Shed Opening | | | | |
| Special | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Cleaned by Crew #_____ Head Cleaner_____

Lubricated by_____ Checked by_____

Restarting Loom Approved by_____(Supervisor)

THIS CARD TO BE HUNG ON LOOM
DURING WEAVING OF WARP

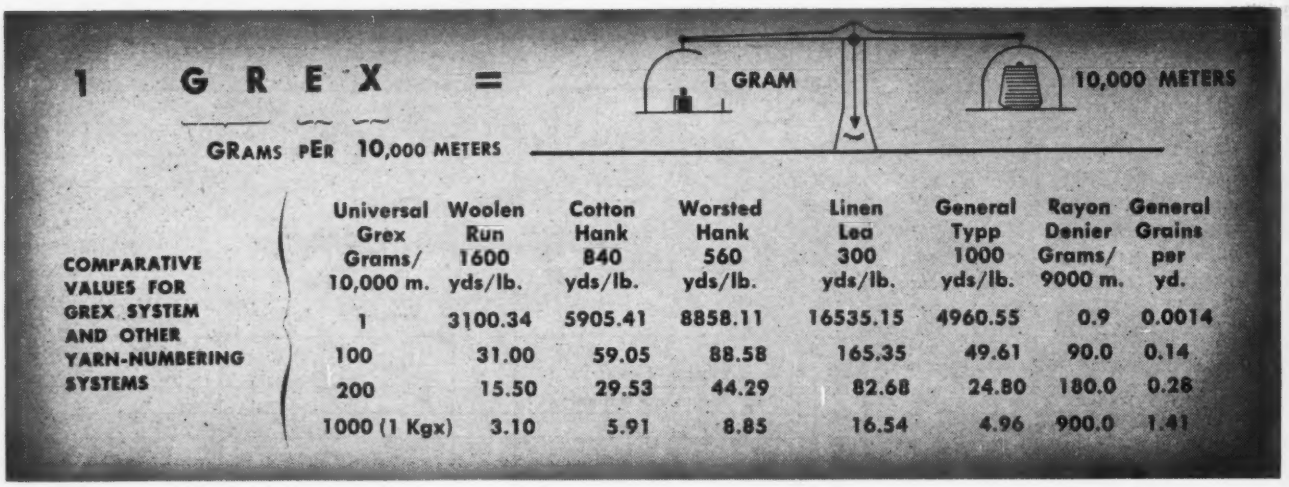
#_____ STYLE_____

***Check chart, such as partial one shown, places responsibility for specific items.***

# How You Can Use the "Grex"

**HIGHLIGHTS:** New Universal Yarn-Numbering System Has as Basis Grams per 10,000 Meters—Would Simplify Fabric Cost and Design Calculations.

**By A. G. SCROGGIE**
*Chairman,*
*Sub-committee B-2, Committee D-13,*
*American Society for Testing Materials*




COMPARATIVE VALUES FOR GREX SYSTEM AND OTHER YARN-NUMBERING SYSTEMS

| Universal Grex Grams/ 10,000 m. | Woolen Run 1600 yds/lb. | Cotton Hank 840 yds/lb. | Worsted Hank 560 yds/lb. | Linen Lea 300 yds/lb. | General Typp 1000 yds/lb. | Rayon Denier Grams/ 9000 m. | General Grains per yd. |
|---|---|---|---|---|---|---|---|
| 1 | 3100.34 | 5905.41 | 8858.11 | 16535.15 | 4960.55 | 0.9 | 0.0014 |
| 100 | 31.00 | 59.05 | 88.58 | 165.35 | 49.61 | 90.0 | 0.14 |
| 200 | 15.50 | 29.53 | 44.29 | 82.68 | 24.80 | 180.0 | 0.28 |
| 1000 (1 Kgx) | 3.10 | 5.91 | 8.85 | 16.54 | 4.96 | 900.0 | 1.41 |

TO AVOID THE PRESENT CONFUSION due to use of various yarn-numbering systems, Sub-Committee B-2, Committee D-13, of the American Society for Testing Materials is currently considering for adoption the "Grex" unit, defined as grams per 10,000 meters. The advantages of the Grex system were pointed out in an article in the January issue of TEXTILE WORLD. The present article outlines briefly how Grex yarn numbers would be used by mills now operating on other systems.

**DETERMINATION OF YARN NUMBER.** Yarn number can be determined according to current procedures and the corresponding Grex unit obtained by reference to an appropriate curve or conversion table.

Whenever lengths are measured in meters and weighed in grams, Grex units can be obtained directly without the use of any table or complicated calculation; thus, when 100-meter skeins are reeled and weighed, the Grex number equals the weight in grams multiplied by 100; a skein weighing 1 gram would be 100 Grex; conversely a skein of 150-Grex would weigh 1.50 grams.

**CONVERSION OF TESTING INSTRUMENTS.** Yarn reels are generally made with six equal "segments" and a perimeter of 1 yd. for wool, 1.5 yd. for cotton, and 1.125 meters for silk and rayon. Any reel can, accordingly, be adjusted to have a perimeter of 1 meter by making the spokes 1/6 meter long (16.7 cm. or 6.56 in.). It will be desirable also to calibrate the dial in meters and to change the gear controlling the dial so that it will make one revolution for 100 meters or 100 revolutions of the reel. However, this change does not have to be made in order to use a cotton reel, since it is possible to reel 109.3 yd. (100 meters) and remove the skein at this point, or to reel the usual skein of 80 turns each 1.5 yd. and multiply the weight by 0.9113 to convert the weight of the 120 yd. to a 100-meter basis.

Balances with arms graduated in terms of grains could be used with special length skeins or with a suitable conversion table. Universal yarn-numbering balances (graduated in mgs.) would not have to be changed for use with meter lengths. Where quadrants are used for weighing, new scales could be substituted without difficulty.

**COMMERCIAL YARN NUMBERS.** Adoption of Grex units would not require the manufacture of yarns of different numbers. The same yarn sizes could be sold under the corresponding Grex numbers; and for a period, it would probably be desirable to quote both Grex numbers and the units previously used. Thus, yarns would be sold as 110 Grex (100 den.) rayon, slik, Nylon, etc.; 52 Grex (60/1) woolen; 295 Grex (20/1) cotton, etc. If it is desired to market yarns with round numbers and avoid decimal fractions, 50 Grex woolen yarn and 300 Grex cotton yarn could be sold. In most cases, the small differences involved are within the normal variations of current deliveries of the nominal yarn number now marketed.

**CONTROL OF YARN MANUFACTURE.** When using the Grex system, one would measure yarn, roving, and sliver in the same or proportional units. Assume, for example, that a mill is spinning a 200 Grex cotton yarn from a 20,000 Grex sliver, and wishes to cut the number to 150 Grex yarn without changing the draft setting. Then a corresponding change would be made in the roving, which would be cut from 20,000 to 15,000. The same change would be made in strict proportion to bring the sliver down to the right weight for the new roving. It is understood, of course, that the change in weight of the sliver might have to be accompanied by adjustment of drafting or twisting factors.

**STRENGTH TESTING.** In the Grex system, tensile strength could be ex-

pressed in grams per Grex. For some purposes, however, comparisons of strength on a gram per Grex basis are strictly valid only for the same type of fiber, or for fibers having the same density.

For any comparison on the basis of unit diameter, grams per Grex should be multiplied by the density of the fibers in question. The product, grams/Grex times density, can be converted directly to pounds per square inch by multiplying by the constant 14,224.

**TWIST IN YARN.** In the cotton industry, it is common practice to calculate the twist to be put into a yarn by means of a twist multiplier, using the formula:

Turns per Inch = Twist Multiplier × Cotton Count

When using Grex units, the corresponding formula is:

Turns per Inch = Twist Multiplier × (5905 ÷ Grex count)

**CALCULATION OF FABRIC COSTS.** To determine the cost of the yarn in a fabric of designated construction, it is customary to make separate calculations for the warp and filling, based on a 100-yd. length. The calculation of the weight required is based on the yards per pound of the specific yarn numbers being used, and these, in turn, are obtained from a yarn conversion table. The calculation, when using Grex numbers, would be identical with that now in use, the only additional requirement being a table showing yarns per pound corresponding to various Grex yarn numbers.

Tables could be calculated to show the yards per pound required for a given fabric construction and a specific Grex yarn number. Such a table would apply to any fiber, and the necessity of having different tables for each fiber would be avoided. A more comprehensive table could be prepared showing the pounds of single yarn required for a given fabric construction, having 100 ends per in. of 100 Grex yarn and a typical reed width. Variation in the number of ends per-inch, or yarn number, or reed width, would be directly proportional, regardless of the fiber used.

**CONVERSION OF FABRIC SPECIFICATIONS.** It is frequently desirable to design a fabric which will duplicate the weight, or strength, of an existing fabric, by using yarns of a different number or even yarns made from a different fiber. General use of a single, direct unit, such as the Grex, would greatly facilitate calculations of this type, since all weights, lengths, and yarn numbers would be in direct proportion at all points on the yarn number scale. If all fibers were numbered in the same system, the substitution of different fibers with the same number would not affect weight, and if direct Grex units were being used, a specific change in yarn number would mean the same change in fabric weight for all fibers and at any point of the yarn number scale.

If it is desired to make a fabric which will duplicate the strength of a given material, but which will have a warp made from yarns having a different strength and possibly numbered in a different system, the problem becomes more complicated. The calculation is comparable for both direct and reciprocal systems, when the breaking load or the tensile strength of the yarns is expressed in the same units, but if this is not the case, a conversion must be made. Adoption of any universal numbering system for all yarns would accordingly simplify all calculations involving the substitution of fibers for which strength is commonly expressed in different units.

### Further Comments Invited

**DO YOU FAVOR general adoption by the textile industry of the universal yarn-numbering system proposed in the accompanying article? The committee which is considering this proposal desires particularly to have your answers to these three questions: (1) Is a universal yarn-numbering system desirable? (2) Is this the best, or a suitable, time to adopt a universal numbering system? (3) Is the "Grex" the best system for the purpose? Let us have your opinion so that we can forward it to the author before a decision is made at the meeting of the American Society for Testing Materials.**

## COMMENTS ON THE GREX

**Following are comments from some textile men who have reviewed the article "How Do You Like the Grex?" which appeared in the January issue.**

**"I have discussed this with the head of our laboratory, and we feel that a universal system would be a distinct advantage and believe that the one outlined seems as good as any."—KENNETH B. COOK, *Manville Jenckes Corp.***

**"I am 100% in favor of such a stabilizing. At various meetings of the A.S.T.M. years ago, Mr. Noechel and I proposed the use of the metric system. Unquestionably now is the best time to bring up such a matter. Compared with the changes which had to be made by the industry in changing from peace manufacturing to war manufacturing, the elimination of the various yarn systems should be an easy matter."—WERNER VON BERGEN, *Forstman Woolen Co.***

**"I have read, studied, and discussed your proposal with the management and also with the different superintendents throughout our organization, in order to get well-rounded opinion. As a general rule, I don't find too much objection. As for me, personally, I would like to see such a system as this put into effect, and I am of the opinion that if D-13 should sponsor such a program, that in a few years it would become universal."—O. G. EDWARDS, *Avondale Mills.***

**"I believe the A.S.T.M. should sponsor this proposal. It seems to me that this is the long-delayed answer to a fundamental difficulty in the textile industry."—WILLIAM D. APPEL, *National Bureau of Standards.***

**"The idea appeals to me a great deal, and I would be glad to support it if the consensus is such that some hope of universal adoption could be realized. You can count me in on a move in this direction."—*Martin Castricum, U. S. Rubber Co.***

**"I feel that such a system should be adopted at the earliest possible moment." — ROBERT F. THAYER, *American Viscose Corp.***

**"The staff of the Research Division is entirely sold on the proposition."—R. W. VOSE, *Chicopee Mfg. Corp.***

**"We would certainly welcome any move toward standardization. We fail to see, however, what advantage this proposal has over the straight metric system. Present users of the straight metric system must have been considered, and they represent 90% of the countries in the world."—C. TIBERGHIEN, *St. Johns Textile Mills, Ltd.***

**"A universal yarn-numbering system would be desirable if it could be effected without widespread confusion. However, in my opinion, the Grex system is not the best one to adopt. More and more of the synthetic yarns using the denier system are being employed. Why not adopt their unit of numbering?"—JULIAN W. HUGHES, *Burlington, N. C.***

# FINISHING Rayon Shirting

**HIGHLIGHTS:** Construction of Broadcloth Used in Blouses for the WAVES—Processing the Fabric to Meet Navy Specifications—Low Residual Shrinkage

**Navy blue rayon broadcloth which is used in making blouses for the WAVES.**

## By PHILIP LEBRUN

TWO TYPES OF BROADCLOTH are employed in making blouses for the WAVES according to Navy Specification No. 55-B-18a. One is a mercerized cotton broadcloth, and the other is a rayon broadcloth. A number of precautions must be taken by the dyer and finisher in processing the rayon fabric in order to meet the requirements for fastness and shrinkage. The procedure outlined below will give good results.

The broadcloth is specified in a plain weave, with a minimum of 112 ends per inch of continuous-filament viscose rayon yarn in the warp and a minimum of 72 picks per inch of spun viscose rayon yarn in the filling. Minimum weight is 3.2 oz per sq. yd. Minimum breaking strength of both warp and filling is 50 lb. Color may be either white or navy blue as specified. The dyed fabric must have good fastness to light, laundering, crocking, and perspiration.

In order to withstand the tests to which it is subjected, the dyed fabric should be fast to washing at 160° F. with soap and soda ash, should show no fading after exposure to the Fade-Ometer for 40 hr., and should have a residual shrinkage of not more than 2% in either warp or filling.

This broadcloth can be handled satisfactorily in any plant equipped with a pad, a jig, and some sort of rope washing machine. The usual finishing machines in such plants will suffice if a resin is used to bind the fabric and prevent excessive residual shrinkage.

**DYEING.** Certain sulphur dyes will just meet the minimum requirements for fastness. However, there is always the danger of bronzy selvages, due to excessive oxidation while dyeing.

A safer, but more expensive, way of dyeing is with the use of vat colors. These are applied by the pigment-pad method. In this method, the thoroughly scoured and dried cloth is padded in a water solution of the well-dispersed vat dyes. This may be either a bluish black alone or a navy blue combined with a black to provide the depth. After padding, the fabric is transferred to a jig, where it is given two ends through caustic soda and hyrosulphite to reduce the dye. The dye is then oxidized and rendered insoluble by giving the fabric two ends through a weak solution of sodium perborate.

Material handled in this way will meet shrinkage requirements. Therefore the goods are soaped in rope form on a beck or reel machine. A small amount of sulphonated oil is added to the last rinse. The cloth is then scutched or opened up, vacuum extracted, and dried without tension. In several plants a loop dryer has given the best results. The cloth is framed and decatized after drying.

**PRESHRINKING.** Some finishers decatize the fabric, others prefer to sanforize to obtain a minimum residual shrinkage. If desired, low residual shrinkage and an increased tensile strength can be obtained without decatizing or Sanforizing by impregnating the material with 2 to 3% of one of the new melamine resins. Such resins, if properly applied, do not have any odor. Neither will they cause any dermatitis unless the wearer is allergic to this type of resin. Since such cases are extremely rare, the possibility of causing skin rash on wearers may be disregarded.

There is one factor in handling which is very important. Because the cloth is usually woven with the minimum ends and picks, the tensile strength is just sufficient to meet the requirements. Any excess tension will, therefore, reduce the number of picks to the danger point. Accordingly, care must be taken to avoid stretching the fabric during any of the finishing operations described above.

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# Three Methods for Making WOOL CREPE YARNS

(Continued from page 111)

that the greatest care has to be taken. Proceed as in the former example, and test for count and twist. If a 1/48s yarn is desired, it will be necessary to spin the singles to about 64s, as the contraction taking place in twisting is from 25 to 28%. The draft in spinning has to be increased in proportion to the contraction in twisting, and in some instances it will require a special dram weight of roving to avoid excess drafting. Using the preceding example, a roving of 1.8 drams in place of a 2.5 dram (per 40 yd.) roving would be required.

The manufacture of S on Z twist and Z on Z twist yarns is fairly expensive. When yarns have to be spun finer, better quality tops have to be used. Fine spinning is necessary to meet yarn contraction. Also, the twisting process is considerably slowed down by excessive twist requirements. Finally, the yarn must be steamed to set the twist and keep it from snarling when in the process of warping, drawing-in, and weaving.

In the spinning and twisting of crepe yarns, every precaution must be taken to prevent snarls. It is well known by practical men that to stop a frame making hard-twisted yarn and then re-start it, leaves a snarl on every bobbin because of the withdrawal of tension when the frame diminishes in speed. Therefore, frame stoppages must be held at a minimum to prevent this defect.

# Seamless Hosiery Defects

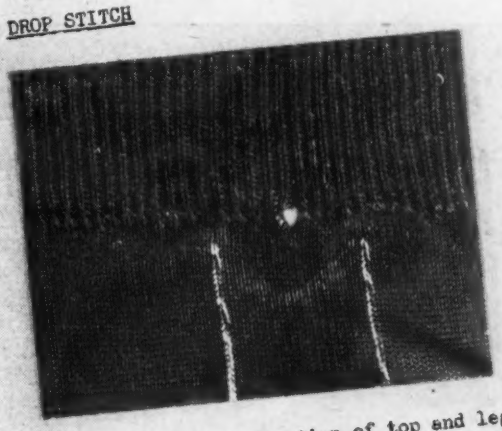
THREE PREVALENT circular hosiery greige defects are shown in the accompanying notebook page reproductions. This system of mounting (or otherwise illustrating) defects, their causes and corrections, soon leads to a complete notebook that can be of great help to knitters, to fixers, and particularly to learners.

Illustrations, such as that showing a drop stitch, are of particular value in training new employees. For this work, they can be supplemented by views of machines and equipment.

Compiling and using these defect pages assists also in standardizing the terms used in describing them. The vertical streaks shown might also be called loose and tight stitches but unless mention was made that they were "vertical" the term might mean loose and tight stitches such as caused by a plucking yarn supply.

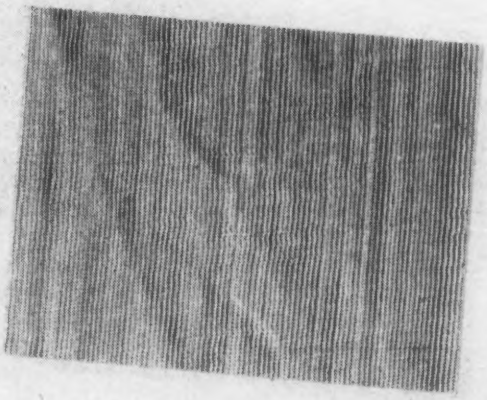
A loose-leaf notebook or a card file lends itself well to illustrating and recording items as they are found. As a large number accumulate they can be grouped into top, leg, and foot classifications or into mechanical, operator, and yarn defects. Under each group the subjects can be carried alphabetically. See previous issues of TEXTILE WORLD for other illustrations f knitting defects.

DROP STITCH



Appearance: Hole at junction of top and leg of sock. Cause: Bad transfer on hand transferring operation. Remedy: Personal correction of worker.

VERTICAL STREAKS



Appearance: Vertical streaks running lengthwise of the stocking. Cause: Tight and loose stitches made by sinkers and needles working too tightly or too loosely in slots. Remedy: Keep sinker rings and cylinders free of lint and keep tension on needles equal. Also see that latches work freely.

TAKE-UP HOLES

Appearance: Hole at toe gore of sock. Cause: Lint or gum in tension causing too much pull which makes yarn miss the needles. Remedy: Needles should be cleaned at regular periods, every day or shift, to prevent lint or gum accumulation.

FIXING Hosiery MACHINES

## FULL-FASHIONED MACHINES—Chap. XX (Cont.)

### THE READING CENTER DRIVE—By Walter A. Simond

THE AUTOMATIC BRUSH SHIFTING DEVICE for B.T.A. motors, if properly and periodically cleaned and oiled, will require little adjustment except for changes in speeds, as required in manufacturing hosiery of a new construction.

This shifting mechanism is shown in Fig. F72. In any recheck of the timing of the camshaft cams, the operating cam *1* is set by an adjustable hook gage (No. 1070-2) and adjusted to the regular needle bar line of the gage. The tip of the gage is at the split of the cam when the machine is in the position for setting all cams. The cam roller 2 must be kept in adjustment so the pin dial 3 will be indexed one tooth when the roller is at the high point of the cam. All idle movements of the pin dial are to be made while the machine is running at high speed.

The pin dial must be operated by means of twelve buttons on the narrowing chain suitably placed for the type of hosiery being manufactured. In the event that the narrowing chain is advanced by hand because a set of stockings has been lost, the pin dial must be turned ahead to its starting position before starting a new set.

Since the index dial must move but twelve times in a set of stockings, the mechanism must be adjusted to allow the regular speed reducing device to bring the speed down to approximately 60 r.p.m. during narrowing or lace forming cycles from normal high speed operation. The indexing pawl on lever *4* should miss contacting the pin dial by about ☆ in.

The adjusting screws *C* in each of the three speed levers *5* should be carefully adjusted and locked to obtain the desired speeds required for knitting the different sections of fabric. The lowest speed is usually employed for plating or herringbone split sutures. In this latter process only a slight rebound of the carriers will cause drop stitches. Screw *D* should be set against the boss on the main bracket when the motor brushes are in the high speed position with no pin in the index dial.

In all types of machines the brush shifting mechanism is controlled by the narrowing chain buttons through the medium of control rod No. 7, Fig. F73. Slightly different connections and details are required for center lace and modified lace machines.

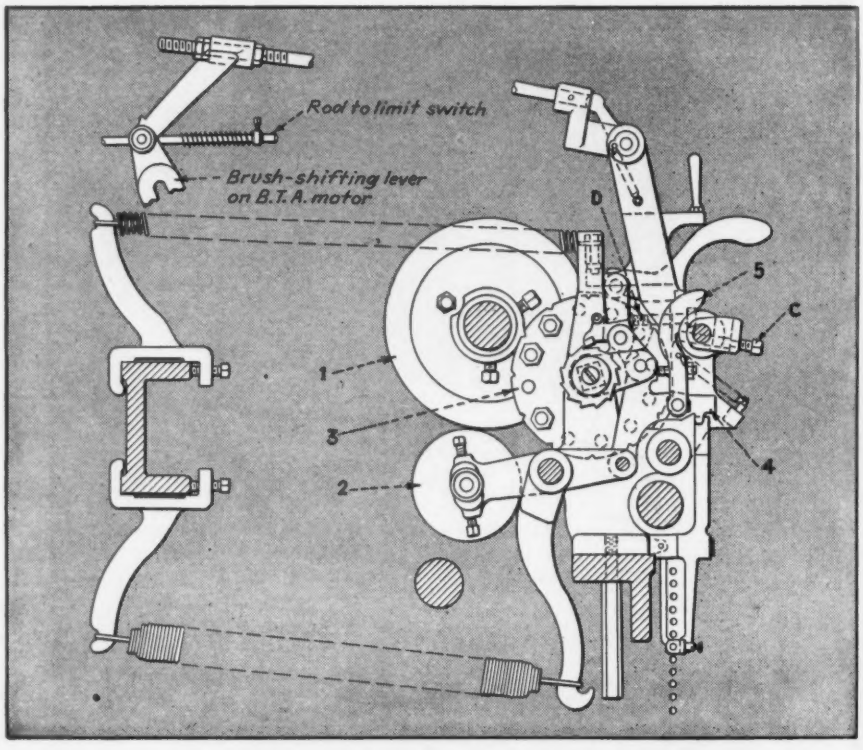



*Fig. F72. Mechanism for changing speeds by brush-shifting.*

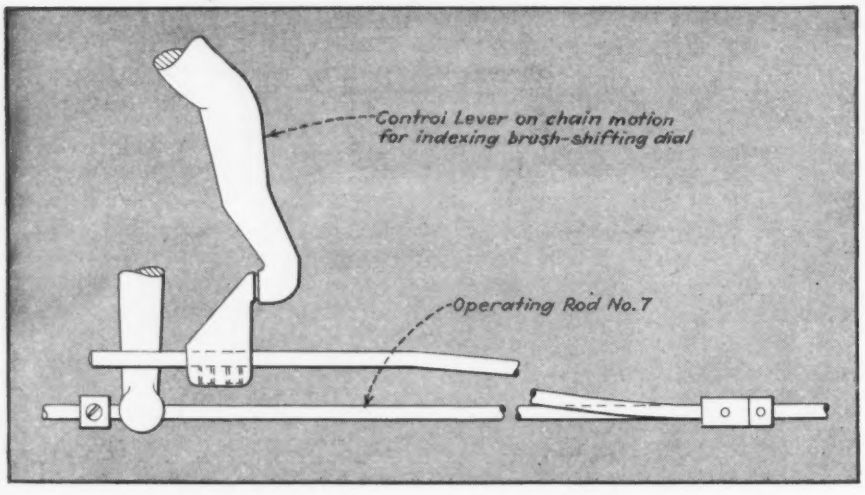
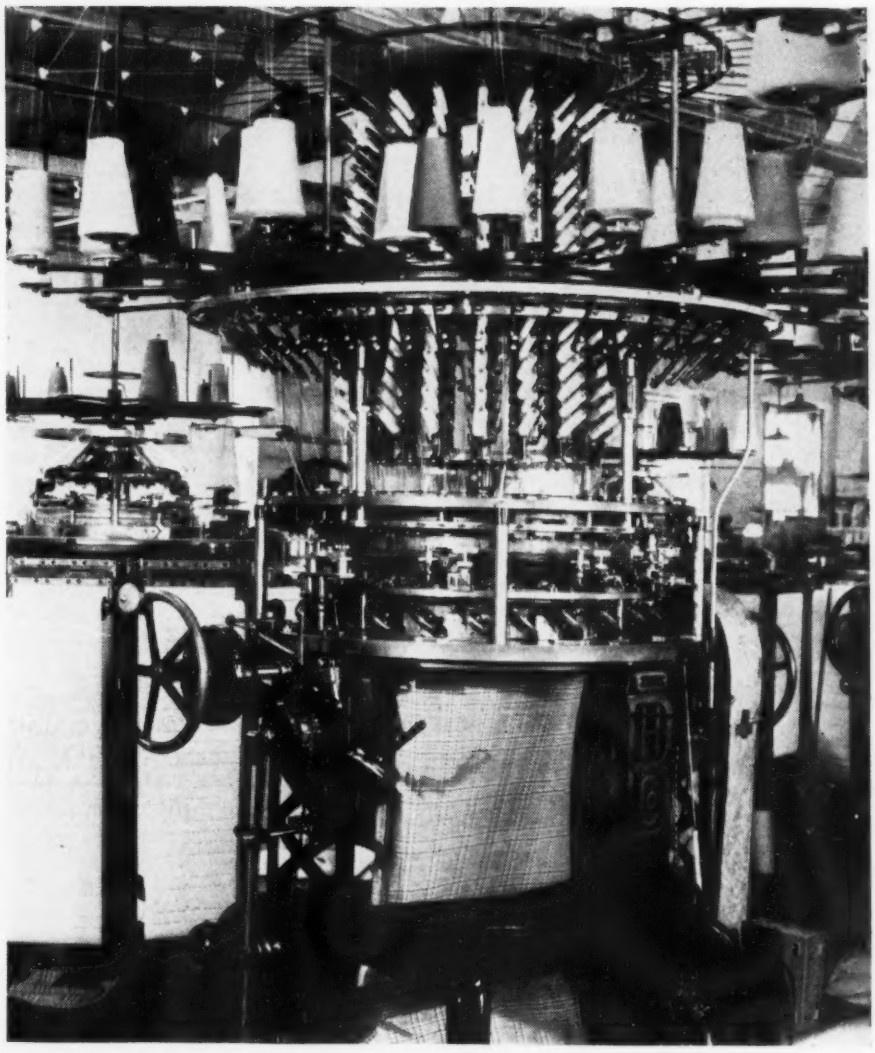


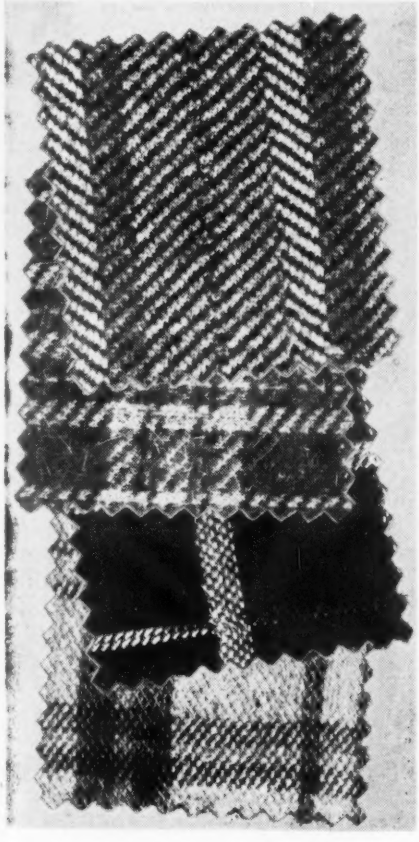

*Fig. F73. Operating rods and levers for indexing brush-shifting dial.*

## Knits on Warp and Filling Principles

A new circular knitting mechanism which can knit vertically or wale-wise as well as horizontally or course-wise, utilize as many individual yarns as there are needles, and knit only one yarn to a stitch, has been developed by Raymond Kretser, knitting-machine designer, 35-30 Corporal Kennedy St., Bayside, N. Y. Many patterns in light-weight material running 54 to 60 in. in width which have hitherto been confined to the woven-design field can be knitted on this machine. Furthermore,



*Brinton knitting machine equipped with warp mechanism (Kretser)*

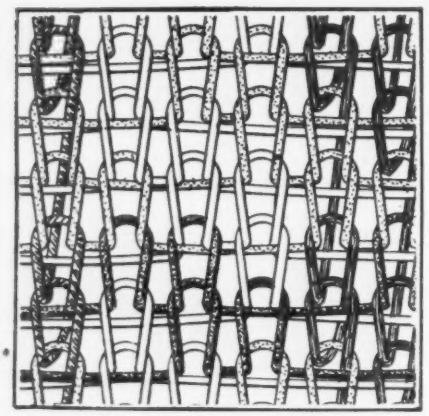


*Samples of weave-like patterns knitted on new mechanism (Kretser)*

the combination of vertical and horizontal floats in the fabric minimizes the characteristic stretch which has hitherto limited the applications of many knitted fabrics.

In effect the new mechanism combines the principles of ordinary filling knitting with some of those of warp knitting. Wrap fingers are used for the wale-wise or warp-knitting stitches, and these are fed from a stationary spool rack rising to a considerable height above the stationary needle cylinder, as shown in the photograph. Provision is made for one spool for each wrap finger and needle; and, since in most cases a spool feeds only one wale of the fabric, a small capacity of package is thoroughly satisfactory. Crowding at the feed is prevented by the design of spool rack, which includes a staggered arrangement of guide holes in the circular feed plate at the bottom of the rack. The ring which supports the wrap fingers can be made to rack back and forth if the fabric design calls for a wrap yarn to move from one wale to another. Where desired, these vertical wale-wise yarns can be merely laid in, rather than knitted in, to increase further the variety of pattern.

The large cones of yarn shown in the photograph supply the usually greater needs of the regular jersey-stitch or filling-knit parts of the fabric. The ring supporting these cones revolves around the machine in the conventional manner. Certain feeds are selected for



*Stitches in typical fabric (Kretser)*

this part of the knitting, each equipped with a striper attachment, a pattern wheel, and the necessary set of cams. The manner in which these yarns can be exchanged with the vertical yarns to produce single-yarn stitches of either is shown in the stitch diagram of a sample fabric. Note how the rigidity-giving floats are largely buried in the fabric. Several samples of fabrics produced by the Kretser method are shown in another photograph.

## Color Hoods for Lamps

Clip-on hoods or shells of permanent natural blue or green colored glass are being offered by Reynolds Electric Co., 2650 W. Congress St., Chicago, which slip over a standard lamp bulb. These lamp hoods are useful in the inspection departments, drawing rooms and burling and mending rooms of textile mills because the blue or green colors filter out the harmful red and yellow rays from electric lamps, thus reducing eye strain and fatigue.

## Fluorescent Extension Lamp

A small, portable fluorescent lamp inclosed in a case and having a 12-ft. extension cord has been developed by Sylvania Electric Products Inc., Fixture Division, Ipswich, Mass., for use by maintenance men and loomfixers. This extension lamp contain a 6-watt fluorescent lamp and provides an adequate amount of cool, glare-free illumination in tight, hard-to-get-at places. Reflector shields the light source from the user and eliminates the danger of eye fatigue. A protecting grill prevents lamp and socket breakage. The small manual starting switch, rubber-covered cord, remotely mounted ballast, and light weight of the unit are features which assure long life.

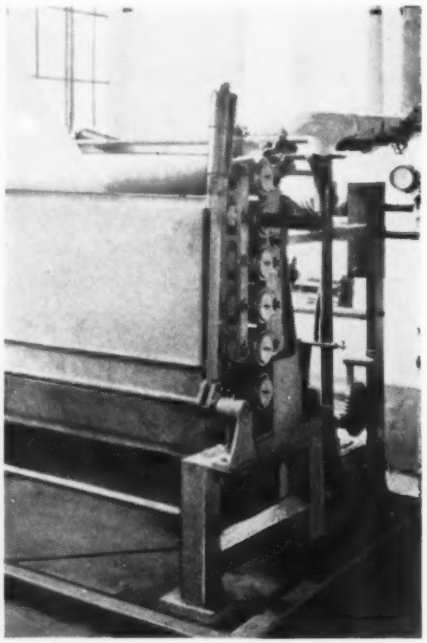
## Circulating Steam Jets

Jets for circulating steam and liquid in tanks and vats, such as used for direct application of steam to baths in textile dye houses and finishing plants, have been announced by Duriron Co., Dayton, Ohio. In addition to being corrosion-resisting, these jets are said to have the advantage of fitting snugly to the inside walls of either square or circular tanks, with a maximum projection of 4½ in. Suspended and center discharge types may be used in tanks of any depth. A floor type is adaptable for tanks of any depth up to 60 in. All types are so designed as to give complete agitation and circulation of the tank contents.

## Six-Roll Washer

Development of a six-roll washer which is the equivalent to a four-compartment washing machine, has been announced by H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, 25. Besides being more efficient and requiring less water, this vertical type washer requires less floor space than the conventional four-compartment machine with individual motor drive.

This latest type Butterworth vertical washer consists of 14 in. top and bottom rubber covered rolls, each with a 50 in. face, and four 8 in. intermediate rubber covered rolls. The cloth passes through a three-bar expander with a hot spray in front of the first nip. Before and after entering each succeeding nip, the cloth passes around the fly roll, the position of which causes the liquor to puddle in front of each nip by means of a hot spray. The cloth is sprayed with hot water on both sides as it goes around the fly roll. The washer is equipped with a stainless steel liquor box for catching the wash liquor. Because of the contamination of the water, the cloth is kept from dipping into the liquor. The machine also contains stainless steel splash pans with doors that allow access to the machine on the entering and delivery sides.

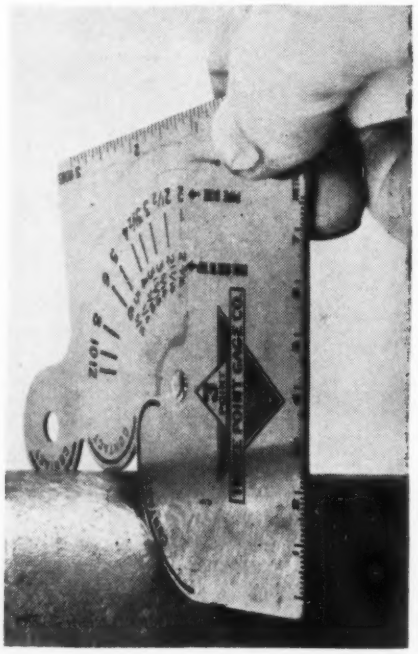


*Six-roll vertical washer (Butterworth)*

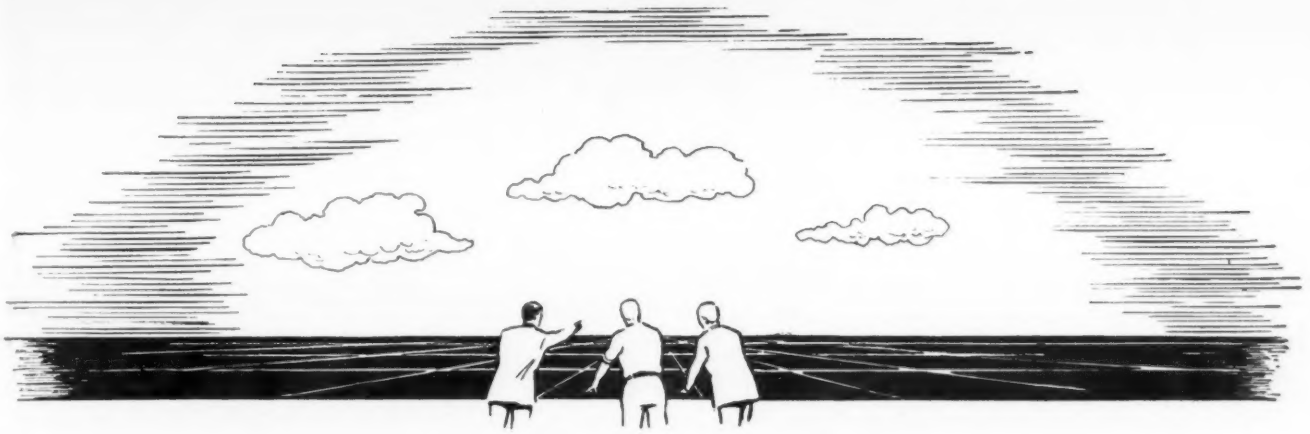
## Pipe Gage

Instantaneous measurement of pipe sizes ranging from ⅛ in. to 12 in. may be obtained with a three-point gage, announced by Three-Point Gage Co., 3821 Broadway, Chicago.

This pocket size gage consists of two pivoted steel plates with edges curved at three points for contact with the pipe to be measured, together with a scale which automatically registers not only the pipe size in terms of inside diameter but the drill size for tapping. Gage measurement is obtained by determining the outside arc of the pipe at three points of contact by placing the two fixed contact points of one plate against the outer contour of the pipe and sliding the second or movable plate until it makes the third contact. The marker on the face of the gage will show the size of the pipe and also the correct drill size for tapping. Only a small section of the pipe contour must be contacted by the gage to obtain accurate readings.



*Gage for measuring pipe size and drill size required for tapping (Three-Point Pipe)*



# MAKE NO LITTLE PLANS FOR TOMORROW

There is no precedent to follow. Post-war planning for tomorrow is a *new* undertaking; calls for new thinking, and a new and unselfish approach to all problems.

If the American System of Free Competitive Enterprise is to survive it will be because American Business, American Labor, American Capital, and American Government, go down the road together, following the principles of harmony, and accepting those restraints that guarantee Freedom for all—alike.

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## Useful Accessories for Textile Mills

**A photoelectric flame safeguard,** has been developed by Combustion Control Corp., Cambridge 42, Mass., as a safeguard for oil, gas, and pulverized coal burners. The photoelectric system provides instantaneous fuel cut-off in any pressure feed burner in the event of flame failure. This flame safety guard may be used in manually ignited burners or with automatically-fired burners. The unit is designed to operate at relatively high ambient temperatures and is mounted directly on the furnace wall and watches the flame through a window in the wall of the fire chamber.

**A thermoplastic,** Amercoat No. 33, for application on metal, concrete or wood, has been developed by American Pipe & Construction Co., Los Angeles, Calif. This thermoplastic is a combination of inert synthetic resins and is suitable for lining storage tanks and processing tanks containing dilute acids or caustics, for protecting superstructures from acids, ventilators and other mill equipment in and about dyehouses.

**Safety engineers** will be interested in learning about a new "Squeez-Grip" type of carbon dioxide fire extinguisher valve developed by C-O-Two Fire Equipment Co., Newark, N. J. To release carbon dioxide, the lever which opens the valve is squeezed against the carrying handle and requires no more effort than is required for a handshake. Once the valve is released it is seated by the tremendous pressure of the gas in the cylinder.

**Penetrating color and hardener** for concrete floors, called Dye-Crete Color Hardener, is available in six colors and eliminates the need of etching to neutralize the alkaline content of concrete before application. It is stated that the dye will penetrate and carry the color deep into the concrete and will dry in from one to two hours, depending upon drying conditions. Wilbur & Williams Co., Park Square Bldg., Boston, Mass., are the manufacturers.

**Floor paint** of white, yellow and special shades for use about textile mills in marking off various sections of a plant, especially those denoting operation zones for trucks carrying bobbins, cloth rolls, etc., is manufactured by Thomson-Porcelite Paint Co., 829 N. Third St., Philadelphia. This paint may be applied to wood, stone, asphalt, wood-blocks, composition and cement and only one coat is required. It may be applied by hand-brush and dries in 20 to 30 min.

## TO KEEP 'EM RUNNING

### Checking Unit Heaters

Mills using unit heaters to supply warm air to the weave shed or to other rooms in their plant should check heaters frequently. With fuel again a critical item, anything that can be done to improve the efficiency of the heating plant is doubly important, as pointed out in an article appearing in a recent issue of *Armstrong Trap Magazine*, published by Armstrong Machine Works. Listed are a number of suggestions:

1. Clean the fan blades and the heating coils, and straighten any bent fins. It takes only a little grease, dirt, lint or dust on blade or coil surfaces to make a big difference in power cost and in heat transfer. If heater is connected to ductwork, see that no obstruction is present in inlet or outlet.

2. Spin the fan manually to make sure it turns freely, and inspect tightness of hub setscrew.

3. Clean the motor, commutator, brushes, switch, etc. In cleaning commutator, use sandpaper, not emery; the latter short circuits the commutator slots. Check the operation of the electrical control and its settings. If motor wiring has been disturbed, check direction of rotation of motor.

4. See that pipe joints, valve stems, etc. are tight, especially on a vacuum system. Clean sediment pocket in return leg. Check steam and return valves to see if they are fully open.

5. Most important of all, make sure each unit heater is equipped with a trap of proper size. Inverted bucket steam traps are by far the best type for unit heaters for quick and thorough removal of air and condensate without loss of steam. Proper trapping of unit heaters may increase their efficiency as much as 50%, saving tons of coal a season.

INSTALLING TRAPS ON HEATERS. These installation instructions are as follows:

1. Attach a short vertical drip leg to unit heater outlet to provide a place where condensate can drain to when steam pressure is off.

2. Connect line to trap slightly above bottom of drip leg so as to leave an easily cleaned dirt pocket to catch scale and dirt.

3. Connect trap close to drip leg. Use a trap with ample capacity.

4. Use a trap that will discharge air rapidly, as well as water, and one that does not require condensate to cool before opening.

Properly functioning traps are essential for obtaining the best service from unit heater installations.

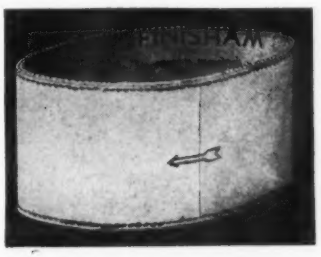
### Caring for Rubber Gloves

Dye-house workers frequently use rubber gloves when handling acids and alkalis in preparing dye baths. Gloves, to be of service must be kept away from solvents. Industrial glove service may be reduced to but a few hours if care is not taken to keep them away from, and the surface cleaned of, oils, greases and other natural enemies of rubber. These agents in contact with rubber will cause them to swell out of shape, become tacky and soft and lose all of rubber's capacity to stretch and return to normal shape.

Clean gloves thoroughly after use to make sure that no harmful materials remain on glove surface. Wash each glove thoroughly before storage. It is recommended that luke warm water and a good grade soap be used. Be sure

*Patched gloves that have been torn or snagged may be used for handling acid drums or other items provided the acid is not in direct contact with the glove.*

# now you can get FRENCH-DRAWING RUB APRONS THAT GIVE ACCURATE yarn count




# FINISHAM

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Until 1939 rub aprons (sometimes called rubbing leathers) used on French-drawing or porcupine frames in the United States, were tanned and manufactured on the continent. World War II shut off these sources of supply and inquiries began to be made among domestic tanners for an alternate to this highly specialized type of product.

We answered the challenge by developing our FINISHAM apron. It is not a copy of something else, but in a class by itself. Within one month's time of the introduction of Finisham to the market, this apron won recognition. It is considered superior to any other type of apron used on a French drawing frame, because:

**—FINISHAM produces highest-quality yarn.**
**—FINISHAM runs straight on rolls.**
**—FINISHAM maintains constant rub surface.**
**—FINISHAM does not stretch.**

We have the honor of being the only tanning and manufacturing concern in the United States to develop a satisfactory leather for use on French Drawing frames. It took many years of research to produce FINISHAM, and requires constant, controlled, tanning supervision to maintain the high quality it enjoys.

Our latest catalog sent upon request.

**FINE FINISHING WITH FINISHAM**

**BARNES PRODUCTS**

**Aprons for Combing, Preparing, Finishing, and Drawing FRENCH AND BRADFORD SYSTEMS**
**Chrome—Brown—Special Tan**

**Plain and Hair-On Loom Strapping**

**BELTING**

**First-Quality Center Stock Prestretched and Manufactured for Each Drive Condition Available in All Tannages**

**HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS**

**BARNES THE** *Textile Leather* SINCE 1876 **HOUSE**

**Where unusual knowledge of Leather is combined with long years of Textile experience**
**APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING**

to rinse off all soap after cleansing because some soaps have a high oil content which will also harm rubber. Rinse in cool or cold water. Then hang them up carefully to dry. Gloves in a hanging position will dry faster and dry well inside and out. Store in a cool place

Photos courtesy B. F. Goodrich Co.

*Clean gloves thoroughly after use. Wash in luke-warm water and with a good grade soap. Rinse off all soap and hang to dry.*

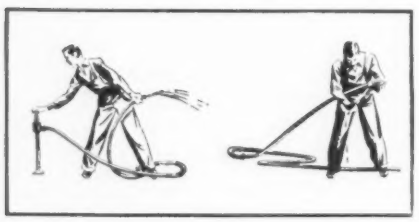
away from direct sunlight. Do not attempt to dry gloves hurriedly on a hot surface—this will cause premature aging and quick deterioration.

Useful life of gloves may be lengthened by patching, but when acid and alkalis are handled, the practicability of patch must be carefully considered. It is not considered safe to patch fingers or palms of acid gloves—the hazard is too great. However, in many cases and for many types of work, such as handling drums, etc., patching is practical and provides many extra months of glove service.

## Handling Rubber Hose

Are your dye house workers shutting off the flow of water through a hose by kinking it? If so, they may necessitate early hose replacement.

The United States Rubber Co. makes the following recommendations in their booklet entitled, "First Aid to Industry in Conserving Rubber." Satisfy yourself that valves are provided at the intake end of all the hose lines in your plant so that the flow of material through the hose can be stopped at that point. Most hose is designed to stand up to the strains involved in the normal passage of substances through it. Shutting off this flow by kinking the hose or by closing it off at the discharge end often causes premature breakdown and failure of a healthy piece of hose.

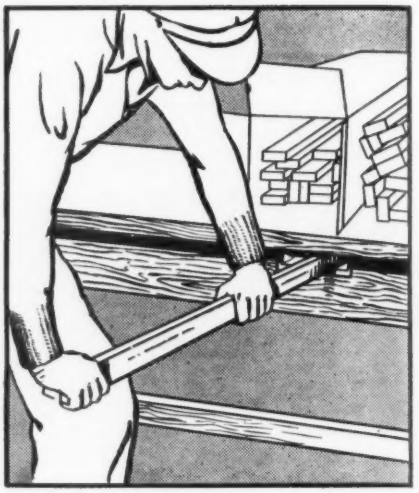


*Water should always be shut off by use of valves, not by kinking the hose.*

## Caring for Picker Sticks

Loomfixers and stock room clerks will find the suggestions offered by E. H. Jacobs Mfg. Co. helpful in conserving those picker sticks that they have in stock.

1. Keep your picker sticks in original cartons until actually needed.
2. Lay cartons flat on shelves or benches.
3. Store in room of consistently moderate temperature.
4. Inspect every stick before attaching to loom.
5. Any good live stick is subject to warpage when exposed to humid and hot atmosphere or exposed to damp floors in supply room. If a stick is only slightly warped it can be straightened, as shown by the illustration and as follows: (a) Insert stick in a 2x6-in. slot cut in loomfixer's bench. Apply sufficient pressure at warped end to straighten. (b) This operation is also a sufficient test for durability of stick.



*Method of straightening picker stick and testing it for durability.*

## DYES & CHEMICALS — PRODUCTS & PROCESSES

## Synthetic Latex

A completely synthesized latex, has been developed recently by Union Bay State Co., 50 Harvard St., Cambridge, Mass. This compound, known as Ubatex, is similar to unvulcanized latex in appearance and method of handling. It dries to a tough, flexible film which is said to be practically identical to a latex film; does not stain; is non-flammable, and provides ageing and waterproof qualities superior to latex. The Ubatex film reaches maximum strength at room temperature, making vulcanization unnecessary. This characteristic permits combining in one operation. Ubatex is suitable for application with standard coating equipment. The base material can be colored within a reasonable range of shades, as required.

Ubatex is recommended also for backing plush, carpets, and other pile fabrics. For backing, it is applied by the same equipment and methods as with latex. Advantages cited include flexibility; non-skid properties; clear, light color; and others such as good ageing qualities.

## Corrosion Preventive

Anti-Corrode, a liquid prepared by Cities Service Oil Co., 60 Wall Tower, New York, meets U. S. Navy test for corrosion protection. This liquid may be applied to machines and machine parts that are to be stored over a long period of time. Application is by dipping, brushing, rubbing, or by spraying and provides a film which will not harden, become brittle or crack. Parts protected with Anti-Corrode, it is stated, are not affected by rain, salt, air, oxygen bearing moisture, etc. Also, surfaces coated may be handled freely without danger of rust spots caused by hand acid.

# Yes-Fight the War AND BE READY FOR PEACE

Our enemy's hour glass may be running out, but we cannot afford to "rest on our oars" • Fighting in the manner that is our part, we have another obligation—planning our peacetime activity • **Today** is not too soon—after the War's end, it will be late to make plans • Now is the time to:

- Explore possibilities
- Crystallize plans
- Make preparations
- Take decisive action

Returning Peace will release Dixie Durene for increasing use in your post-war merchandise. When you think of Durene, think of Dixie.

10% OF DIXIE'S PAYROLL IS INVESTED IN WAR BONDS

## Dixie MERCERIZING COMPANY

CHATTANOOGA 1, TENNESSEE

AMERICAN COTTON MADE IN U.S.A.

## Dixie Durene

A PRODUCT OF CONTROLLED MANUFACTURE

Made of Durene® multi-ply mercerized cotton

4 WAYS BETTER than ordinary cottons

EXTRA COMFORT ---more absorbent

EXTRA STRENGTH ---longer wear

EXTRA QUALITY ---lasting lustre

EXTRA SERVICE ---easy to wash

# Kinks AND SHORT-CUTS

## A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are published will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

Sign your contribution with a pen name if you wish to preserve complete anonymity, but include your real name and address as evidence of good faith and to permit payment for items published.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **THIS MONTH'S PRIZE WINNER**

### Split Clutch-Disks Save Installation Time

When changing the clutch disk on Model XK or XD Draper looms, considerable time is required if the conventional disk is used, as shown in Fig. 1. The normal procedure entails removing a handwheel and a crankshaft bearing, moving the shipper arm out of the way for clearance, then removing the clutch driving cone, the clutch finger assembly, release springs, and the four bolts which attach the disk to the flywheel. The new disk is then bolted to the flywheel, the various parts are replaced, and the clutch fingers and shipper assembly reset.

In contrast to this procedure when a split disk is used, as shown in Fig. 2, the work involved is greatly reduced. To replace an old split disk, merely remove the four bolts which attach the disk to the flywheel, and slide each half out from the two driving clutch plates. Then insert the new halves, bolt securely to the flywheel, and reset the clutch fingers.

The split disk will be in perfect time and have the same stability as the conventional disk when bolted securely to the flywheel, since it will be pressed firmly between the two clutch plates when the shipper arm is in the driving position. Experience has shown the split disks to be as serviceable as the conventional type.

The main point to watch is in the cutting of the disks. They should be cut exactly in half with the cutting line bisecting the bolt holes as shown in Fig. 2.—H. Clyde Hardy, *Greenville, S. C.*

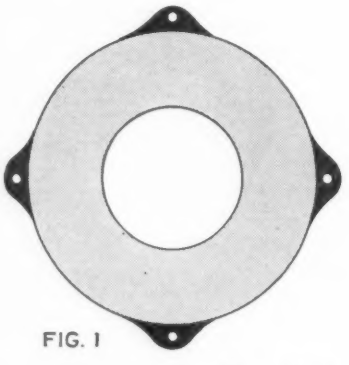


FIG. 1

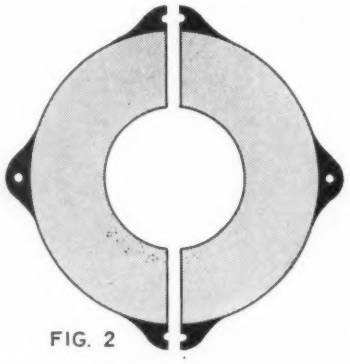


FIG. 2

*Conventional and split friction disk*

### Quick Comparative Viscosity Measuring

Measuring the viscosity of size solutions or other textile liquids is often desirable. Hydrometers or more complicated apparatus can be used, and should be for scientifically accurate measurements, but for a quick comparative check the device illustrated, suggested by Westinghouse Electric & Mfg. Co., is quite serviceable.

This funnel-shaped device is merely placed on the surface of the liquid, and the time for the liquid to flow up through the orifice is measured in seconds. When using, it is best to time the flow until the liquid touches the adjustable pin on top. The advantage of the adjustable pin is obvious, as timing can be set to round figures. However, in opaque or opalescent liquids the time measured can be the

(*Continued on page* 132)

# "Kelly"

**The gang tagged her "Kelly," a long-legged, skinny, red-headed, freckle-faced girl. Queen to the knights with gilded washtub shields and shiny curtain rod swords. "Kelly" was always a "queen." She's married now but the name sticks — has anyone seen "Kelly"?**

**Now "Kelly's" a Wave. It's her kind of a job and her husband's in the Navy, too. "Kelly's" identity won't be lost for aside from her own distinctive personality, every item of her equipment carries distinguishing marks. More than likely Kaumagraph Identification Products are used, for all branches of the Service have been keeping us busy.**

Kaumagraph Dry Transfers, Prestomarks, Seals, Labels provide safe, certain, attractive, economical identification, decoration, information on any texture, any surface — textiles, leather, rubber and all sorts of synthetics.

Now is none too soon to see to it that the personality of your business, your product is tied up with an identity that sticks like "Kelly's." Why not send for a Kaumagraph Identification Man today?

*Identification Headquarters since 1902*

**KAUMAGRAPH**

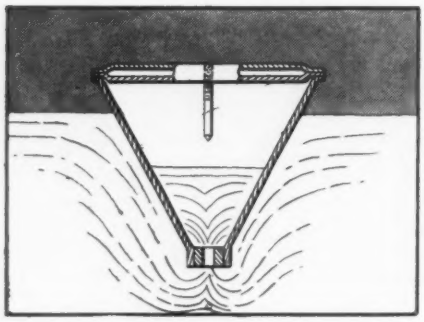
**LITHOGRAPH *by* KAUMAGRAPH**

Even though the War and Navy Departments are taxing our facilities, we will gladly plan and produce in reasonable time the kind of box wraps and labels that will help your identity stick like "Kelly's."

KAUMAGRAPH COMPANY • WILMINGTON 99, DELAWARE • EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD.

## KINKS & SHORT-CUTS

(Continued from page 130)



*Handy viscosity tester.*

period until the top flange touches the surface.

This device can be made from almost any funnel, but the newer plastic types which are clear and unbreakable are preferred. The orifice should be of metal for weight, and the opening can be made any diameter, depending on the liquid to be tested. Orifices of different sizes can be used, but the device is so simple and inexpensive to make that one for each size needed can be kept with the orifice size clearly marked on top.

### Knitting Machine Threaders

One type of threader for knitting machines was described in the November, 1943, issue of TEXTILE WORLD. The accompanying illustrations shows two special types of threaders that are quite serviceable and easy to make.

The advantage of the small-diameter handle of the long threader shown in Fig. 1 is that the threader may be passed handle first through the warp yarn reels where it is most convenient to thread them from above. The handle is made from the inner coil of compound needle-cylinder bands, and often pieces of broken bands may be thus utilized. The hook end of the wire should be polished, and blued to prevent breakage in bending the hook. Draw the temper only enough for the bending. After the hook is nearly closed, it may be finished by closing it over the edge of a 0.01-in. sinker blade. Cut the wire for the hook 6 in. long, insert in the handle, and solder it in place.

Fine hooks for threading the small tubes in full-fashioned knitting machine yarn carriers shown in Fig. 2 can be made easily. The wire should first be ground at a long angle as shown at *A* in Fig. 2, then polished carefully. Draw the temper as little as needed, bend and fold close over a 0.006 in. sinker blade to the shape shown in *B*. A wood handle *C* of about $\frac{5}{16}$ in. by 3 in. long is preferred.—W.S.

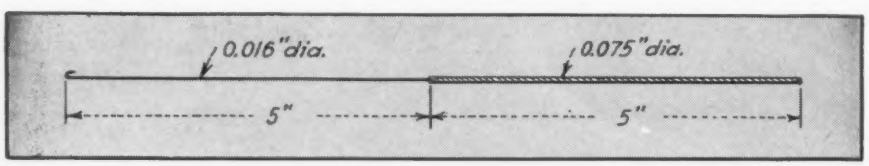



*Fig. 1. Threader for seamless knitting machines.*

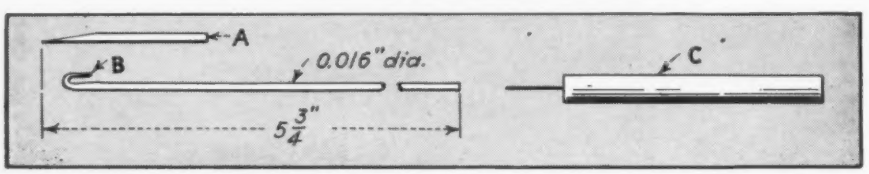
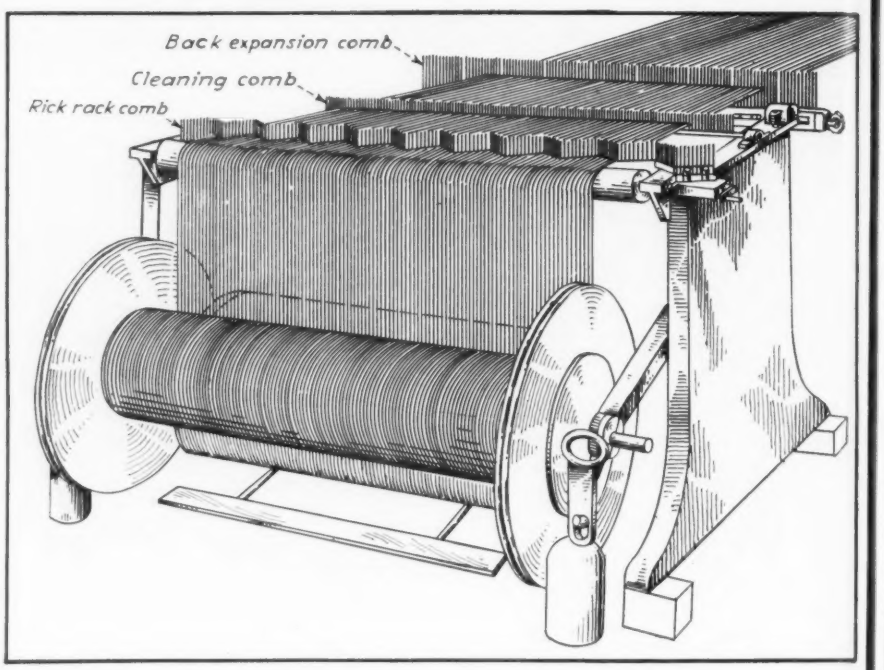



*Fig. 2. Threader for fine full-fashioned machines.*




*Comb type cleaner for twisted synthetics.*

### Final Cleaning of Twisted Yarn Warps

Loose and twisted-in waste can generally be found in warps made from twisted synthetics even though previous operations include careful cleaning. This waste causes breaks and stops in weaving and often results in cloth defects that can be costly. Removing virtually all troublesome warp waste can be accomplished simply by utilizing a loom beam comb as a cleaner on the warps as shown in the illustration.

The comb used is the type made by reed manufacturers for keeping ends straight on a loom beam. It can be of 40 dents per inch, although the yarn being run may necessitate a finer or coarser type. The metal-back, open-top comb with short dents is recommended, as the dents remain true longer and hence the cleaning openings tend to retain their accuracy longer over a given period of time.

The comb can be mounted on a turning rod in a sleeve arrangement or on a hinge so that it can be swung out of the way as knots are pulled through after creeling. The ends do not have to be laid in the cleaner, but take their places as it is swung into position.

This device is effective on voile, crepe, or combination synthetics. In a controlled test it reduced loom stops due to waste by 93%. It also will remove stripbacks that have already developed in combination yarns. It is not recommended, although it can be used, for untwisted synthetics.—M. S.

(Continued on page 134)

# AMERICA'S WOMEN ANSWER THE CALL...

## *Nearly 850,000 Spin and Weave for Victory*

ALWAYS the spinners and weavers of the race, women today make up two-thirds of America's "manpower" in the world's oldest industry...Women are contributing to the miracle of textile production to provide more than 300 different military fabrics for our 8-million army already on 60 battlefronts.

Here at STANDARD we are proud to be a part of this great industry and pledge ourselves daily to keep production and bond buying at peak so that we may help advance Victory's time-table.

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STANDARD DURENE • SELO • PREEMO
COMBED SAKS • COMBED PEELERS • THREADS

# STANDARD-COOSA-THATCHER CO.

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*Representatives in principal Central and South American Countries*

**KINKS & SHORT-CUTS**
(Continued from page 132)

## Preventing Complaints About Color Fastness

Customers are likely to complain if dyed articles they have purchased lose even a slight amount of color when washed, even though the color remaining is exceptionally fast. To overcome this, proper selection of dyes and techniques used is, of course, important. As an additional safeguard, an inexpensive process can be employed which should preclude this objection.

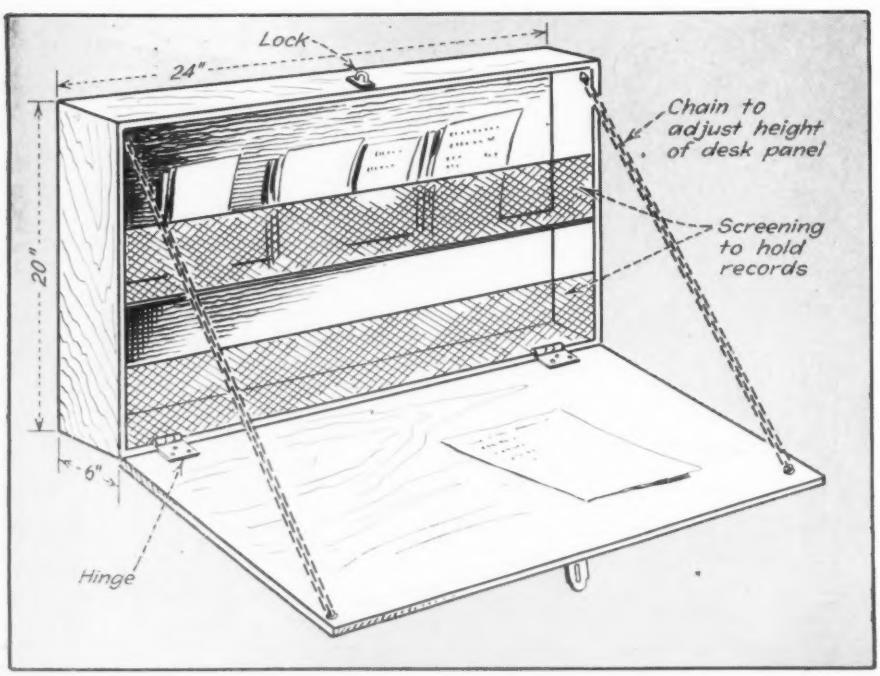
First the dyer should match his sample very slightly on the dark side, then rinse the fabric thoroughly, and soap it at a temperature 10° higher than the temperature for which the color is to be guaranteed (usually washed at 130° F.). This pre-soaping seems to remove all the residual dye, which is so objectionable in the home washing machine.—L. P.

## Foreman's Desk Folds Against Wall

A wall desk is a necessity in our plant. As our wall aisles are used for trucking, a desk had to be built which would require little room in order for bobbin and cloth trucks to pass. The problem was solved by one foreman, who constructed the desk shown in the sketch.

When the desk is in use, the front panel is lowered to form an excellent writing surface. When the panel is closed, trucks can pass freely. The lock on the panel gives the user a safe place to keep important papers.

The wall desk was made from plyboard secured from shipping cases, and the sides came from reed shipping boxes. The front panel is hinged at the bottom so it may be swung open or closed. A hasp is attached to the top of the panel and case, so that the desk may be padlocked when closed. When opened, the desk panel is positioned for height by the use of two chains, one on each side, secured in the manner illustrated. Screen wire, across the inside, forms satisfactory pockets to accommodate the required papers and card forms found in the usual textile mill.—H.W.E.

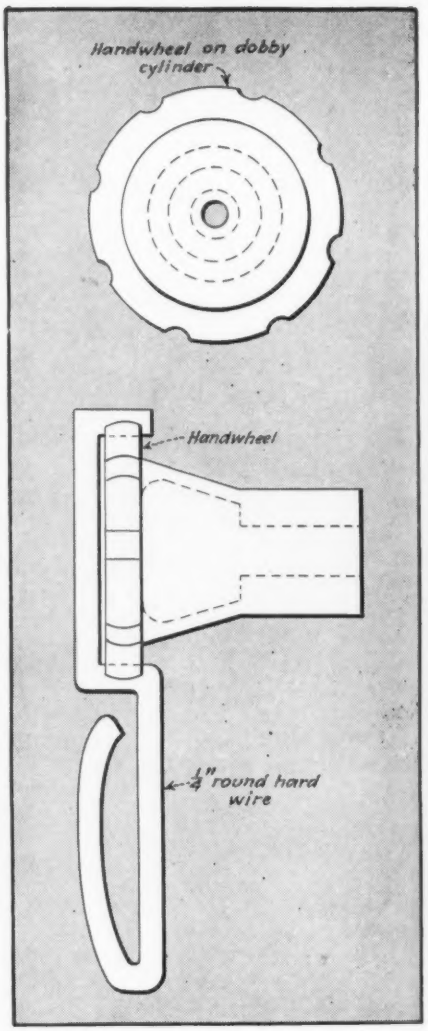



*Folding wall desk for close places.*

## Handwheel Lever Helps Women Weavers

Because they do not have strength enough in their hands, many of the smaller girls have trouble turning back the chain cylinder of the dobby when finding the pick. They cause other workers to lose time by getting them to turn the chain cylinder and lose considerable time themselves looking for help. This condition is especially bad when the give-away on the cylinder has to be tightened to pull long chain patterns.

To overcome this trouble, a lever can be made of ¼-in. steel wire, as shown in the diagram. This slips over the handwheel of the dobby cylinder, fitting nicely in two opposite cut-outs. By using the lever, a girl can turn back the cylinder easily. When the lever is not in use, it can be hung on the side of the loom.—F.G.




*Handwheel lever bent from ¼-in. wire.*

## Intermediate Picker Blending of Cottons

Customary practice in opening cotton is to blend as many bales as is practicable in the bale-breaker. The purpose is to obtain a uniform mix as to grade, staple, and color; and the procedure is recommended when the lint used is of one type from one locality and posseses the same general characteristics.

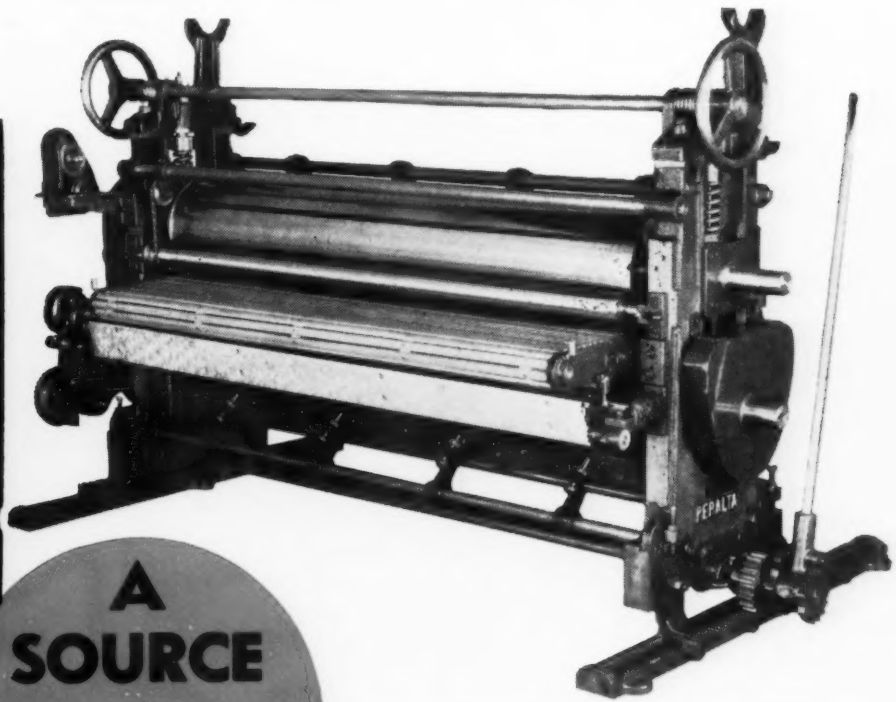
This method generally is carried over to the blending of different cottons, such as blending one grade of cotton with a higher grade. However, actual experience has shown that it is

(Continued on page 136)

# *The Patented* **PERALTA** *Machine*

## *Eliminates all defects from defective wools*

**MAKE HIGHGRADE FABRIC from LOW GRADE STOCK**

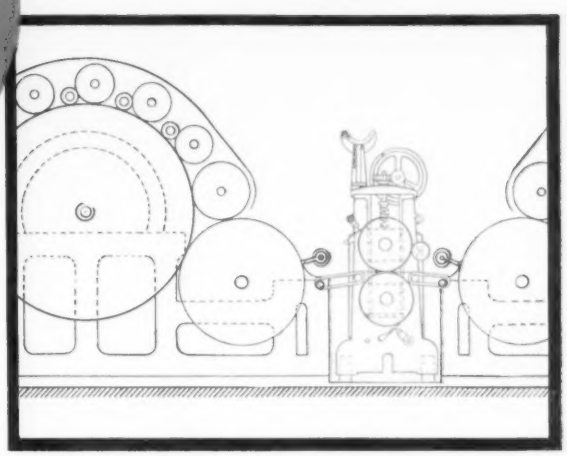



**A SOURCE OF PROFIT**

Just add it to the card—and burrs and other foreign bodies are crushed to powder, leaving the wool fibres uninjured.

Card speeds increased up to 10%. Spinning speeds increased up to 20%. Ends down reduced about 75%. Less waste . . . yarns more even . . . higher average tensile strength . . . better weaving . . . more uniform dyeing . . . burling and specking eliminated or greatly reduced.

Try it on ONE card—and you'll soon be like so many other mills—COMPLETELY PERALTA-EQUIPPED! Hundreds of these machines have also been installed.



**FITTED TO YOUR CARD**

This diagram shows the simplicity of adding the PERALTA Machine to a woolen card. Burrs and other foreign bodies which are crushed pass along in the web and are carded out in the next operation! The PERALTA improves fabric quality, increases your mill output, and means greatly increased savings.

*Write today for complete data*

**HUBERT G. DUESBERG**

**7 WISWALL CIRCLE • • • • • • WELLESLEY 81, MASS.**

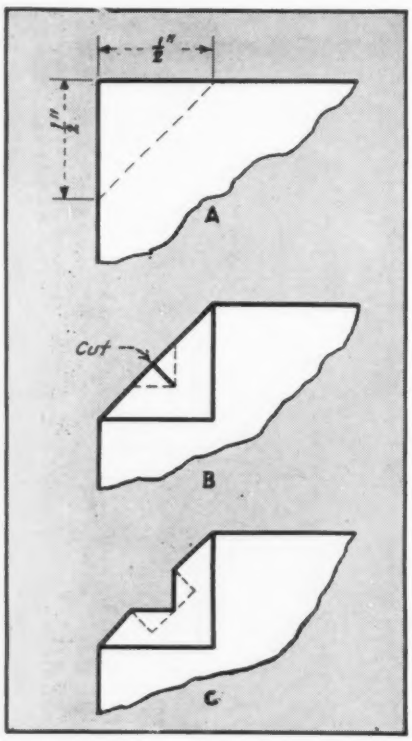
**Telephone: 0618 R**

**KINKS & SHORT-CUTS**
(*Continued from page 134*)

a better practice to process each grade separately up to the intermediate picker where the blending can be done. This procedure has been found to improve the average grade of the blend and to improve its spinning value. It is based on the idea that by processing the poorer grade by itself, the worst part is disposed of easier before the mixing takes place.—R. B.

## Substitute for Paper Clips

To fasten papers together without the use of paper clip the sheets to be secured are placed in position on top of each other. The upper left-hand corner is turned down at points ½-in.




*Method of fastening papers without clips.*

from top and left edges as shown by dotted line at A in the illustration.

After turning down the corner as shown at *B*, a slit is torn or cut at the center and at right angles to the turned down edge for a depth of about ⅛-in. The two ears formed by this slit are folded back as shown by the dotted lines in diagram. The completed folding binder appears as shown at C.

These are very simple operations that can be done quickly. Papers in transit are held together by this method and are easily separated as required. For a permanent fastening stick a small piece of gummed tape across the two ears to attach them to the back of the sheet and assure durability.—C.R.O.

## Equalizing Vacuum in Steam Return Lines

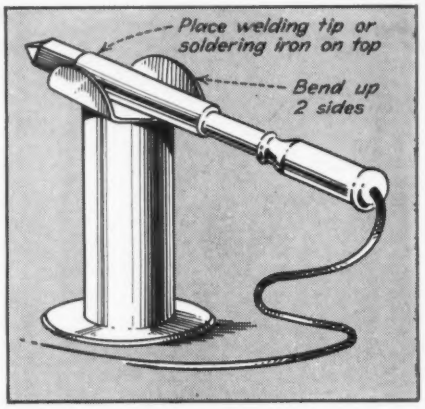
In the utilization of exhaust steam for heating in textile mills and other industrial plants where long horizontal runs of piping are required to take care of different buildings, or departments, the return-kier vacuum system is commonly employed. This makes use of automatic return valves on the individual coils and radiators and employs a vacuum pump in the engine or boiler room to produce the necessary suction on the main return line. With this arrangement, it is evident that unless there is some form of equalizing device there will be a stronger suction in the shorter return lines than in the longer ones, due to the greater friction and in leakage of air in the latter.

This condition may be overcome and a proper balance secured in the main branches by use of the arrangement shown in the sketch. In this case return line "B", from the further building, practically gets the full suction force of the pump at its connecting point "G" with the main line "A". This, however, is reduced, due to friction, etc., as the distance from the pump back to the building increases. The suction, or vacuum, in the return "C" from the nearer building is regulated by the automatic control valve "D" which maintains practically the same suction conditions at the junction "F" with the main return as at "G" from further building.

Direct connection between the lines "B" and "C" is sealed by the trap "E."—C.L.H.

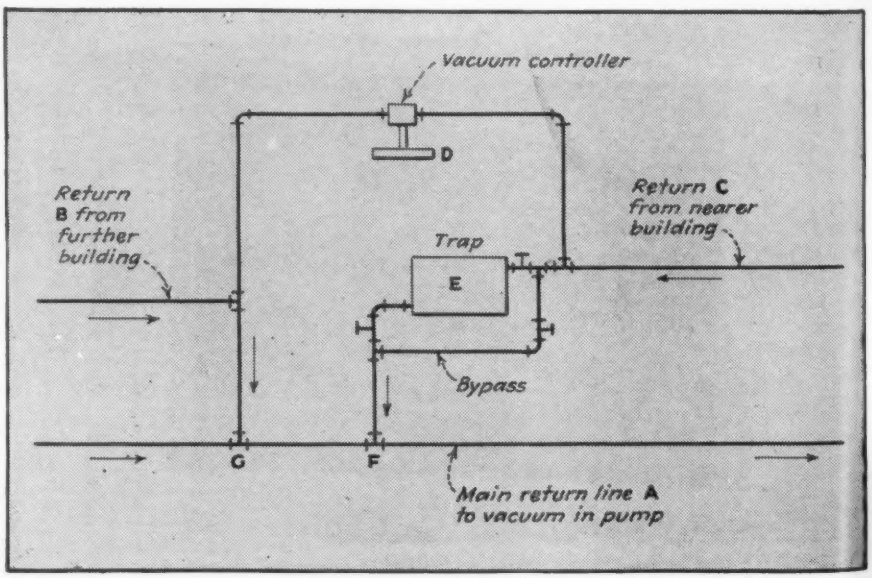
## Soldering-Iron Holder

In the reed-repairing department of our drawing-in room, a handy soldering-iron holder was made from a



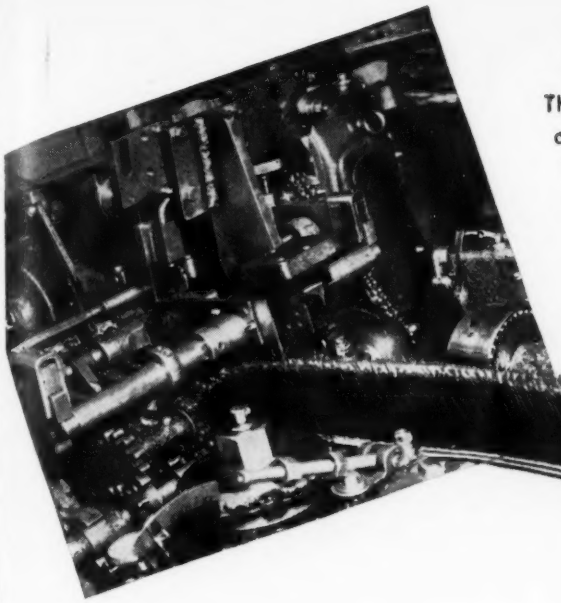

*Soldering-iron holder made from bobbin.*

damaged metal-head throwster's bobbin. We used a slightly damaged bobbin by bending the sides of one head up to form a basket-like holder, as shown in the sketch. If a bobbin with a large diameter barrel is used, the head can be bent flush with the barrel in order to give a firmer foundation. When the iron is put down for short pauses, it is laid in the holder where it is instantly available and at the same time is not a fire hazard.—W.E.H.




*Automatic control valve equalizes vacuum in steam return lines.*

# FULLERGRIPT BRUSH STRIPS
## are made on a machine like this..



The brush material is centered over a ribbon of heavy-gauge metal and held in place by an anchoring wire and roll-formed into the finished shape as illustrated ①. Thus, as the bristles are doubled under the anchoring wire (hairpin style) and encased in metal under great pressure, permanency is assured.

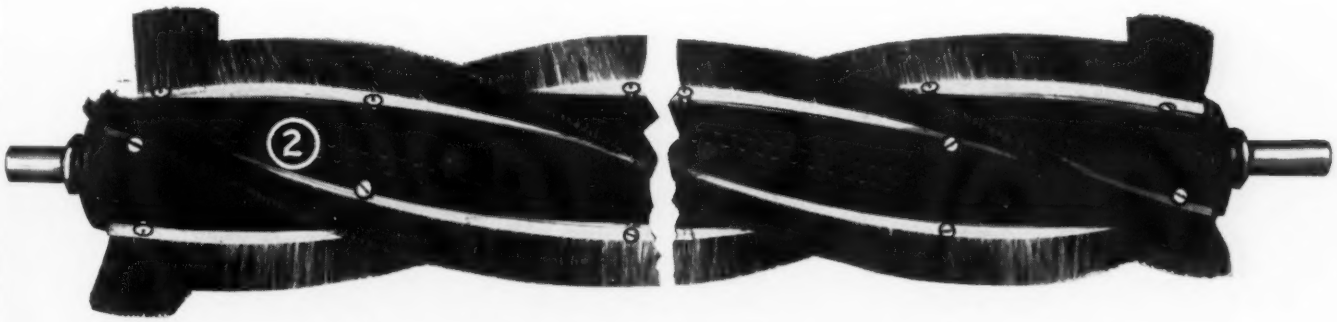
**FULLERGRIPT** has a solid, continuous fill of material with no gaps or spaces between the bristles, resulting in much longer life and far better cleaning.

## *COTTON MILLS can re-brush their* FLAT CARDS *with* FULLERGRIPT BRUSH STRIPS -

which are shipped pre-formed to the correct degree of spiral (right or left hand). Your own maintenance men can easily mount them to the old brush roll.

***Over 6000 Cotton Card Machines***

are equipped with our brush sets and are doing a better job of cleaning card clothing.




***This is how your maintenance men renew your worn-out card brushes with FULLERGRIPT STRIPS***

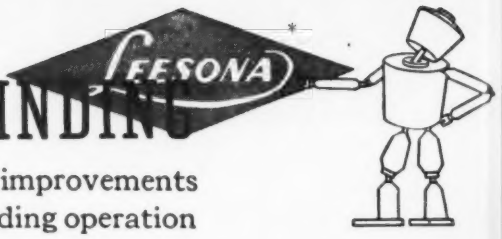
Put worn card brush roll in lathe centers. Trim off old tufts of bristles with a sharp knife. ② Sandpaper the roll. Apply two coats of black shellac. Drill screw holes on 8" centers and fasten the spiralled Fullergript Brush Strips with the special screws furnished with each set of strips.

***EVERY WEEK*** **some *COTTON MILL* in the United States installs one or more sets of *FULLER FLAT CARD BRUSH STRIPS***

**THE FULLER BRUSH COMPANY**
**INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.**

THIS IS NO. 43 OF A SERIES ON

# GETTING THE MOST FROM WINDING




**Information about winding designed to show improvements in winding equipment and new ideas in the winding operation**

*(The third in a series of articles on tools used with Universal Winding Machines. Earlier articles discussed tools for the Roto-Coner* and No. 50.)*

## SPECIAL TOOLS USED ON NO. 90 WINDING MACHINE

The No. 90 Winding Machine requires the use of the following special tools:

| | |
|---|---|
| Traverse Wheel Hub Cleaner | 90-492-3 |
| Spindle Driving Gear Locating Gauge | 90-880 |
| Clutch Collar Adjusting Gauge | 90-1876 |
| Clutch Lever Spring Lifter Hook | 50-279 |
| Gainer Mechanism Wrench | 90-164 |
| Traverse Bar Bearing Persuader | 90-1875 |
| Traverse Bar Lever Driver Wrench | 90-179 |
| Traverse Bar Support Bracket Nut Wrench | 90-3689 |
| Cop Former Gauge | 90-1040X |
| Frame Oil Tube Nut Wrenches | 90-693-B<br>90-693-C |
| Drive and Rocker Shaft Bushing Nut Wrench | 90-165 |
| Coupling Wrench | 160-211 |
| Oil Gun | 90-846 |

## TRAVERSE WHEEL HUB CLEANER

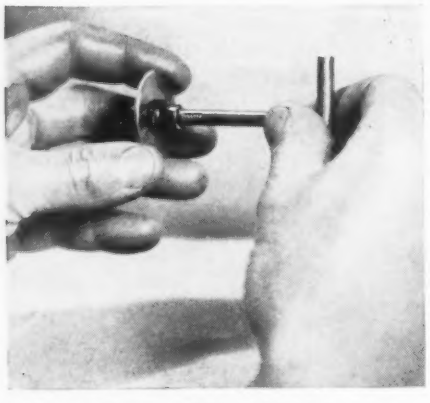


Fig. 1 Traverse Wheel Hub Cleaner, 90-492-3

Dirt and lint accumulating on the inside of the Traverse Wheel Hub is not readily discernible. So if the Wheel is found to be acting sluggishly, not rotating freely on the Traverse Bar, or if "ridgy" bobbins are being produced, it is likely that lint has collected in the Hub and is preventing free action.

To remove the dirt accumulation, it is necessary to disassemble the Traverse Wheel from the Traverse Bar. Tool 90-492-3 is then used. It is essentially a small rod, of exactly the same diameter as the Traverse Bar, and has a series of seven teeth. When it is inserted into the Hub, the Hub can then be turned on the Hub cleaner by hand, and the accumulated dirt will be thus cleared out.

## SPINDLE DRIVING GEAR LOCATING GAUGE

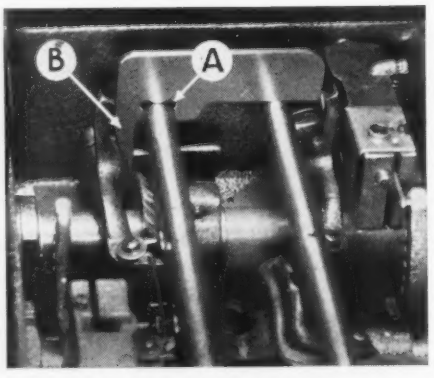



Fig. 2 Spindle Driving Gear Locating Gauge, 90-880

The Spindle Driving Gear (90-212-3AX) is so designed that when it becomes worn, it can be split into two pieces with a cold chisel and easily removed from the machine. New replacement gears come already split (90-212-3X), and are properly applied to the Driving Shaft with the aid of the Locating Gauge.

It is first necessary to remove, in order:

| | |
|---|---|
| Sleeve | 90-26 |
| Clutch Spring | CS-525 or CS-526 |
| Clutch | 90-15 |
| Spindle Gear | 90-16-L or 90-16-R |
| Collar | 90-459-4X |
| Spindle | 90-866 or 90-866-C |

The two pieces of the new Spindle Gear should then be assembled on the Driving Shaft with screws SC-4902, brought up evenly and finger-tightened. This is the point where the Locating Gauge is to be used.

With the operator facing the side of the frame nearest the Driving Shaft, the Gauge is placed over the two spindles, with the opening (A) in the Gauge straddling the right-hand spindle and the rest of the Gauge resting on the second spindle. The projection (B) on the Gauge should, of course, be pointing down.

The Driving Gear is now brought up face to face with the projecting finger (B). Then, with the Gauge held firmly against the spindles and against the face of the Driving Gear, the two parts of the Gear can be tightened to the shaft by a wrench.

Following this, the other parts are reassembled.

## CLUTCH COLLAR ADJUSTING GAUGE

In case it becomes necessary to readjust the Spindle Gears (90-16-L or 90-16-R) to the Clutch (90-15), the Gauge 90-1876 is used.

The two spindles are set at one time. Tapping each Spindle Gear lightly with the wooden handle of a screw-driver will make sure that the inside surface of the Gears is in contact with the outside or wearing surface of the Clutch. The Clutch Collars (90-459-4X) should then be freed from the spindles and the Gauge inserted between the Collars and the Spindle Gears. The Collars are then to be drawn securely against the Gauge and tightened. After removing the Gauge by hand, the Spindle Gears should be tapped lightly again with the screw-driver handle to become free from contact with the Clutch.

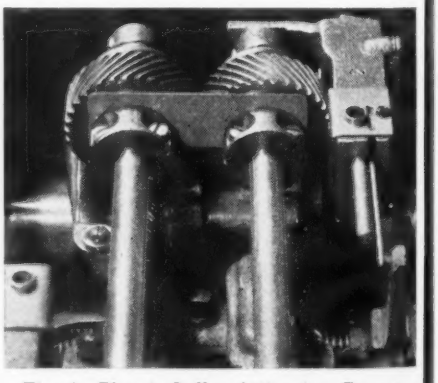


Fig. 3 Clutch Collar Adjusting Gauge, 90-1876

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## TECHNICAL MEETINGS IN WARTIME

**Should operating executives be encouraged to attend technical meetings or should such meetings remain out for the duration?**

JUST A MINUTE JOE, HOW ABOUT COMING ALONG WITH ME TO THE TEXTILE ASSOCIATION MEETING NEXT WEEK? BRING ONE OR TWO OF YOUR MEN-HAVE PLENTY OF ROOM IN MY CAR.
ARE YOU CRAZY, PETE? I DON'T HAVE TIME TO SEE MY FAMILY, MUCH LESS GO TRAIPSING OFF TO A BULL SESSION 200 MILES AWAY! NO IT'S NOT WORTH IT IN WAR TIME.
WHY, JOE, YOU USED TO GO TO ALL THE MEETINGS WHEN YOU WERE SECOND HAND. NOW, THAT YOU'VE GOT THE JOB YOU WANTED IS NO REASON TO CLOSE YOUR MIND TO PROGRESS OR HOLD BACK THE MEN UNDER YOU.
WELL, I CAN'T SAY IT DIDN'T HELP ME, BUT RUNNING LIKE WE ARE NOW AND WITH TRAVEL RESTRICTIONS, WE CAN'T GIVE THE TIME OR MAKE THE TRIP. THE SUPER CAN GO, BUT WE'RE TOO SHORT HANDED TO TAKE A MOB TO THE MEETING.
BILL, YOU'RE JUST IN TIME! WHAT SHOULD BE DONE TO GET MORE ATTENDANCE OF KEY MEN AT TECHNICAL ASSOCIATION MEETINGS? I BELIEVE WE ALL AGREE SUCH MEETINGS ARE ESSENTIAL AND HELPFUL.
YES, PETE, NOT ONLY THAT BUT NOW WE'VE GOT MORE PROBLEMS TO DISCUSS THAN EVER BEFORE. THERE SHOULD BE MORE MEETINGS, CAREFULLY PLANNED TO ANSWER THESE QUESTIONS
BILL, WE CAN'T AFFORD TO ATTEND DURING WAR TIME, I THINK THESE MEETINGS SHOULD BE CANCELLED FOR THE DURATION AS HAS BEEN DONE IN SO MANY CASES!
BILL, WE STILL HAVEN'T SETTLED WHETHER OR NOT OVERSEERS, SECOND HANDS AND FIXERS, SHOULD BE ENCOURAGED TO ATTEND THESE MEETINGS! I BELIEVE THE READERS CAN HELP US OUT BY SENDING IN THEIR OPINIONS TO US. WHAT ABOUT IT FOLKS?
OFFICE

# Letters From Readers

## Likes to See 'Em Smoke

"The Worker Who Wants to Smoke"
(Pete & Bill, Nov., 1943)

Dear Pete & Bill:

Just a line to tell you what I think of your discussion about smoking. In Picture No. 1 you are all OK; in No. 2, Bill is right; in No. 3, Jack doesn't need to be backed up; Pete, I agree with you and Bill because I like to see people smoke because it takes a lot off their minds when they are all balled with their work.

Jack, I like the style of your six hairs. Pete & Bill, your friend Jack reminds me of Eddy Cantor. (PB 114)

## Smoking Good Only as Disinfectant

"The Worker Who Wants to Smoke"
(Pete & Bill, Nov., 1943)

Dear Pete & Bill:

In regard to the help smoking during working hours, it is not safe even in a fire-proof building. As any thing in the line of explosives or so, might burn within. It is also injurious to health. So no good can come out of it. I have heard it is good as a disinfectant, while visiting one with a contagious disease, if one may smoke a cigarette before entering. May you all enjoy a happier life by these facts. (PB118)

## Friction Should Never Exist

Correcting Workers' Mistakes
(Pete & Bill, Oct., 1943)

Dear Pete & Bill:

Personally, I would say the workers should have full cooperation of management and of the boss, for in the plant or in the factory friction should never exist. No dissatisfaction, no disruption, whatever. Brotherly love and kindness should always remain uppermost, that the maximum in production be maintained. The spirit of animosity should not be allowed to get its hold on the business. If something goes wrong smilingly make the adjustment satisfactory to all concerned.

A smile and a pleasant word costs little effort, but they mean much in the end. Let the spirit of good-fellowship always pervade; and, "Love one another," according to the scriptural injunction. (PB123)

## Urges Helping Hand

"Correcting Workers' Mistakes"
(Pete & Bill, Oct., 1943)

Dear Pete & Bill:

No, by all means No—it's not good foremanship, neither is it good sportsmanship to bawl out workers. The best of us make mistakes; no one is perfect. Just give the employee a helping hand; or a lift; a kind and an affectionate word. Any one will respond better to a kind expression—a word of helpfulness, that leaves the spirit of good fellowship foremost between employer and employee; we are all human, and not so much difference between most of us after all.

The executive, or the boss, that is

## MEMORIES OF OLD MAN CARELESSNESS

**By MARTHA PITTENGER**

### *No. 13—ONE TOO MANY*

After walking around in the mill for several hours, with the folks giving me the cold shoulder, I decided to take a trip around the village, and see what the carpenters and painters were doing. I walked up back of a fellow repairing a porch. Everything seemed harmless, until I noticed a keg of nails near by, and, looking closer, I saw a nail at the top of the keg the carpenter hadn't removed when he took the lid off.

So I took a seat and waited until the carpenter was low on nails, when I knew he would go back to the keg for more. Now, if he would just reach in and grab a handful in a hurry, and drag his arm against the nail, it would make a nasty cut, and no telling how serious it might turn out.

That's just what happened! It was about dinner time, and Joe was in a hurry to get the last nail hammered before the whistle blew. As he dashed his arm into the keg, and snatched it out, the point of the old nail caught against against his elbow, cutting the flesh deep. Before he took time to go to the mill for first aid, his arm was infected, which put him out for several days.

I was delighted to add that accident to my record book since it happened in the last place that I thought I would have any luck.

kind and lenient enough to give his employee an opportunity to right his errors is most assuredly the right man in his place, and he will succeed and have friends who will stick to the job and turn out work highly satisfactory to the management. (PB112)

### Let Correction Be Done in Private

Correcting Workers' Mistakes
(Pete & Bill, Oct. 1943)

Dear Pete & Bill:

It is an unwise policy for the boss or foreman to go defiant and boisterous in his efforts to correct the errors of the workers. If something has gone wrong and the employee has erred the boss should go to him in a calm, friendly manner, and privately, if possible, because no one wants to be the subject of censure in the presence of others. It is embarrassing for the honest worker who is conscientious and wants to perform his work well for the boss to come out in the open with criticism over a certain way he did his task. When he is given a kind, gentle correction, he should be convinced that his boss is his friend. (PB122)

### The War—First and Foremost

"Production and Hours Worked"
(Pete & Bill, Dec. 1943)

Dear Pete & Bill:

Were I the foreman of the plant I would bring the proper influences to bear to have the men put on the 48-hour week in order to keep production up, with "Help Win the War" as the principal slogan. That would be, in fact it should be, ample with the average employee who has the supreme war effort, and final peace in mind (when our boys can come marching home).

I would also stress the possible post-war conditions—with a cut in production, and a lowering of wages, urging the worker to stick to his job—to save, and economize.

In fact there should be no resentment upon the part of the men under the circumstances. I would push a strong argument on the issues, stressing the successful prosecution of the war as the leading one. (PB121)

## BOOSTING EMPLOYEES' Morale

### High School Children Learn about Cotton

An educational program, entitled "From the Field to the Loom," a study of cotton, has been adopted by key high schools located in the largest cotton producing counties of Arkansas. More than 5,000 students attending these schools will participate in the program which is designed to create an understanding of the basic values of cotton to the South.

Classes will visit the fields during planting and harvesting, and there will be trips through cotton gins, oil mills and compresses in their vicinity; also a visit to Memphis to see a cotton mill, food and feed mills and the Memphis Cotton Exchange.

Lending their effort toward the program are educators, Rotary clubs, Arkansas Farm Bureau Federation, county farm bureaus, chambers of commerce and agricultural councils.

### Establishes New Cafeteria

At the Beaumont Mfg. Co., Spartanburg, S. C., headed by Walter S. Montgomery as president, work has been started on a new cafeteria for employes. The management announced

(*Continued on page 170*)

# Metal Planes are Controlled by Cotton

The control surfaces of military planes, the rudders and ailerons, are covered with mercerized cotton airplane cloth.

This specially pre-treated fabric is coated with lacquer compositions to armor it against ripping, and penetration of air and water.

Experiments are now being made with synthetic fabrics to determine if there is a material that will fuse at an even lower temperature.

The Textile Industry is helping to speed America's production of war planes by supplying this airplane material in rolls as tape or in wide widths, ready for immediate use.

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The cooperation of Butterworth Engineers is freely offered to mills seeking to achieve increased productive efficiency . . . or to repair or replace worn-out or obsolete equipment.

All of our facilities not required for Ordnance production are available to help you solve your present finishing problems, and aid you in your post war plans. Let us serve you now

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## COTTON SECTION, *Part 2—Chap. III (Cont.)*

### *LOOM LEATHERS——By Ivar Moberg*

A SHORT AND A LONG LUG STRAP, as employed on Draper looms, are shown in Fig. C16. A number of these lug straps have been made of leather, but such straps have not proved satisfactory. Hence, these straps are now made of canvas, of fiber composition, or of wood.

Canvas straps can be purchased with or without plugs, but few mills use the plugless straps because their useful life is very short. The first impact of the picker stick is taken by the strap itself and each succeeding pick will weaken the strap until it has been cut through. In the plug type of canvas strap, the impact is taken by the plug and the strap is not weakened by the direct contact with the picker stick. However, the canvas strap has a disadvantage, that of elasticity. As canvas will give and absorb a shock, it will reduce the force of the pick. Such straps sometimes have to be discarded while still in good condition.

The writer has tried lug straps made from various kinds of fiber composition, many of which gave excellent results. But, fiber lug straps are difficult to purchase under present conditions. Wooden lug straps are made of tough hickory wood and are durable and suitable, making excellent lug straps. These lug straps are either made from a single piece of wood, bent in the middle to form a loop, or are made up from two pieces of straight wood, between which is bolted a plug, or bunter, to take the impact of the picker stick. The former has a leather plug, or bunter, riveted in place to take the impact of the picker stick.

The wooden lug strap, made of two pieces of straight wood, has a plug that is replaceable by removing the bolt which holds it between the two wooden pieces. Either of these wooden lug straps gives good service and may be used until it goes bad. For best results, the bolt that holds the plug to the lug stick should be equipped with two washers so as to prevent the wood from splitting along the slot in the end of the strap.

The lug strap may be supported in numerous ways at a fixed point on the picker stick. A support should be chosen that will prevent the lug strap from sliding on the picker during the pick. If sliding is permitted the pick will be very uncertain and the strap will wear rapidly. A type of lug strap support, or power block, as it is also called, is shown in Fig. C16. This unit consists of a cast-iron block which is clamped to the picker stick at a fixed height. To prevent the lug strap from sliding up on the stick during the pick a T-shaped piece of leather, known as a power block strap, is placed between the power block and the picker stick and held in place by the clamping action of a U-bolt. A better way of supporting the lug strap is by using two of these power blocks, one below and one above the lug strap, thus preventing all sliding of the strap.

Features of this type of strap support are that holes and woodscrews are dispensed with and that a finer adjustment in the height of the lug strap can be had. Also, the lug strap will not drop down on the picker stick and cause the shuttle to fly out.

The heel spring strap, shown in Fig. C16, can be made from old check straps. If this strap should break no serious damage will result. The loom will either continue to run or bang-off. When picker sticks are replaced the heel straps can be examined for renewal if necessary.

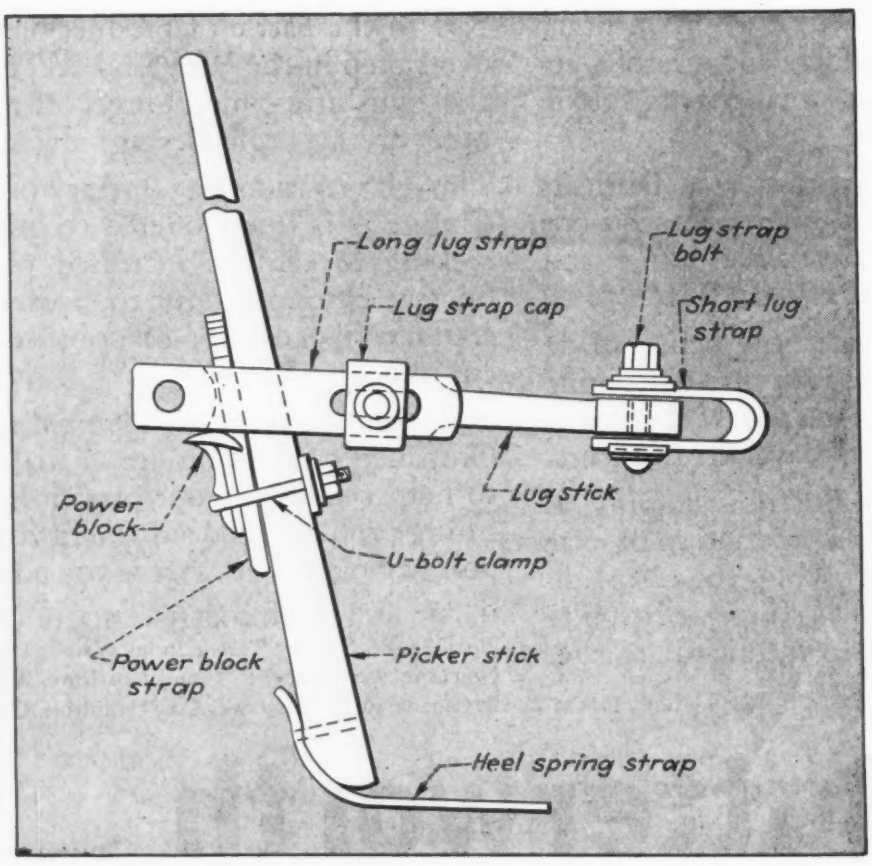


*Fig. C16. Lug strap and lug stick suitable for use on Draper looms.*

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Apply it in any conventional equipment—such as padder, mangle, quetch or dye-beck. Vary the application temperatures or speeds if necessary. The results will be uniformly good . . . and the fabric's appearance and shade will be unchanged.

Such results are possible because PRO-SO-TEX #62 forms a stable and finely dispersed emulsion that penetrates all conventional construction fabrics ***rapidly*** and ***evenly***. There's no wax spotting . . . no foaming at high application speeds . . . no necessity for high application temperatures.

To insure the absolute uniformity of every barrel of PRO-SO-TEX #62 a new technique of control is used throughout its manufacture. Thus you can expect each lot to provide the same highly effective results as the last.

For more complete information on PRO-SO-TEX #62 . . . and other new Quaker textile products . . . write for a ***Quaker Process Engineer*** to call. You'll find him an experienced textile man with a fund of useful knowledge and training from which you can draw to help you meet changing conditions and shortages of familiar processing materials. Having him call places you under no obligation whatever. Use the convenient request form below.

*Method A.A.T.C.C.

### OUTSTANDING QUALITIES OF PRO-SO-TEX #62

- Does not change appearance of fabric or injure shades.
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- Emulsion particle size is fine. Penetrates fabrics rapidly and uniformly, regardless of fabric weight.
- May be applied at any convenient processing temperature under 170°F. without loss of repellency or spray resistance.
- May be applied in any conventional equipment.
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**1. Your after-the-war looms** are discussed in the December issue of *Cotton Chats*, published by Draper Corp. It is stated that changes will be gradual and not radical after the war. Considerable discussion is devoted to the truth about gadgets and the addition of gadgets to looms to improve their production and provide for more efficient operation.

**2. "Why Jelly Strength?"** is the title of an article appearing in the December issue of *The Houghton Line*, published by E. F. Houghton & Co. Textile men handling rayon slashing will be interested in this article as it discusses the fallacy of determining the efficiency and suitability of a rayon sizing agent by jelly strength and viscosity.

**3. Getting the Most from Winding.** No. 42 of this series, illustrates and describes special tools used for fixing a No. 50 winding machine. Textile mill men will find that this addition to the series will be of great help as it describes in addition to the special tools the cam roll gage, the traverse bar bearing gage and illustrates and describes how they should be used in the adjustment of a No. 50 winder.

**4. Textile engineers** will find an article entitled, "Saving Steam on Low Pressure Heating," as contained in Issue No. 5 of *Armstrong Trap Magazine*, and published by Armstrong Machine Works, helpful to them in their work. The use of inverted bucket traps on vacuum and low pressure heat service is well covered in this article.

**5. "American Wool Council,"** is the title of an article appearing in *Making the Grade in Wool*, January issue, published by Eavenson & Levering Co. This article is the second in the series on the American Wool Council and reveals some of the behind-the-scene incidents in the Council's fight against influences which tend to depreciate value or restrict use of wool.

**6. Textile chemists** will find an article entitled, "The Personality of Dyes," appearing in the January issue of *Dyelines and Bylines*, published by Calco Chemical Division of American Cyanamid Co. of interest as it compares dyes to personalities and states that no two are alike. This article also emphasizes the importance of knowing the molecular structures of dyes.

**7. "Enzymes—Nature's Unique Chemicals,"** is the title of an article appearing in *The Rohm & Haas Reporter*, December issue, published by Rohm & Haas Co. The culture of enzymes is covered along with the various materials which produce them in reasonable quantities. A number of the interesting uses are discussed in this article.

**8. "Brazing with Silver Alloys,"** is the title of an article appearing in the December issue of *Electrical Review*, published by Allis-Chalmers Manufacturing Co. Master mechanics and textile engineers will be interested in this article as it covers the substitution of silver alloy brazing for the use of ordinary lead-tin solder and describes how in the electrical industry it has turned out to be more efficient than the original soldering. Various types of joints are described and the heating of

(*Continued on page 174*)

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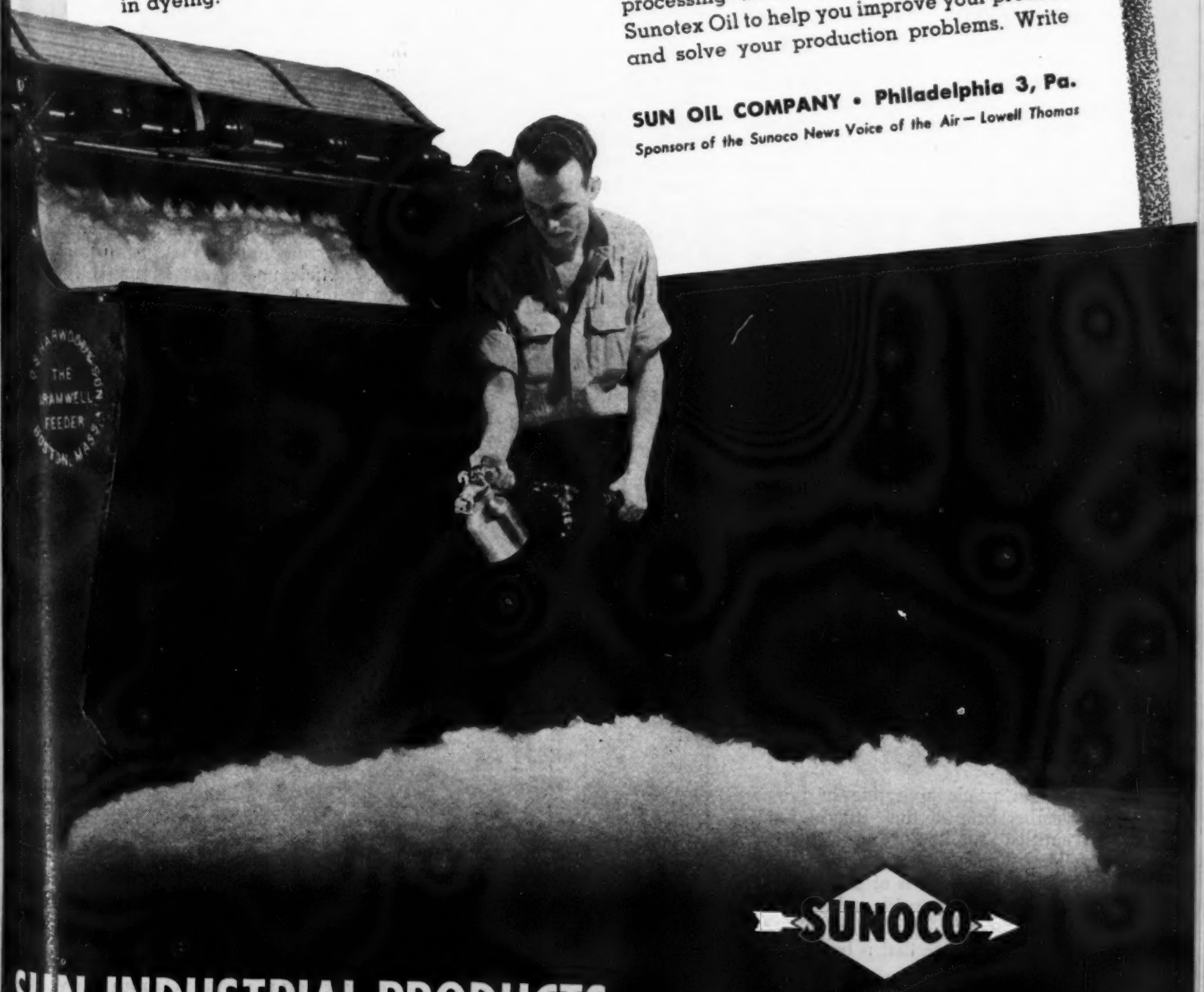


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# Round Table

**With meetings of operating executives curtailed, there is need of a meeting place where mill men can discuss problems among themselves. The Round Table is designed to supply this need. It is open to all readers for discussion of subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. Names of contributors to the Round Table will be held confidential if so requested. Sign your contribution with a pen name if you wish to preserve complete anonymity, but include your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.**

## Fire Prevention in Opening Rooms

In our work as fire protection engineers serving a considerable portion of the textile industry, we have learned from experience to look with considerable disfavor on cotton "ageing" or "blooming" bins. A small fire in the opener room equipment, which otherwise would result in little or no damage, almost always is carried into these bins by way of the pneumatic conveyor or condenser. The resultant loss, in addition to the actual monetary loss, involves valuable raw material and considerable inconvenience to the mill.

For example, the average loss per fire at plants having the "ageing" or "blooming" bins is about ten times greater than at mills operating without the bins.

Bins are found mostly in mills making fine yarns using high density long-staple cotton. Many mills claim they cannot operate without the bins; others claim they are not necessary if proper preparatory equipment is used. I would like to hear the pros and cons on this point from as many mill men as possible. From those mills making fine numbers using long-staple foreign and domestic cotton, I would like to know what equipment they have in their opener lines which makes the bins unnecessary.—R-38)

## Method of Improving Fabric Break

The article appearing in the November issue of the "Round Table," entitled "Method of Improving Fabric Break," was read with great interest, since this subject is of paramount importance to the textile industry.

The method, as outlined in this article, is the same that is being used in our laboratory and we feel that due to the possibility of damaging the fibers around the edges of the jaw when the pressure is applied to the jaws at one time, that the method outlined in the November issue is the only one whereby a true tensile test of the fabric can be obtained.

I agree with R.W.M. in his statement that the strength of a fabric cannot be increased on the testing machine. However, I do believe that you can get tensile strength results that appear to be higher than the true strength of the fabric in the following manner: In making quite a number of grab tests using different methods of applying the pressure to the jaws, I have found that by applying the pressure gradually up to a point just before rupture of the fabric and then tightening down on the jaws suddenly, that this method has a tendency to jerk the pendulum forward, thereby giving a much higher tensile strength than I believe is actually in the fabric.

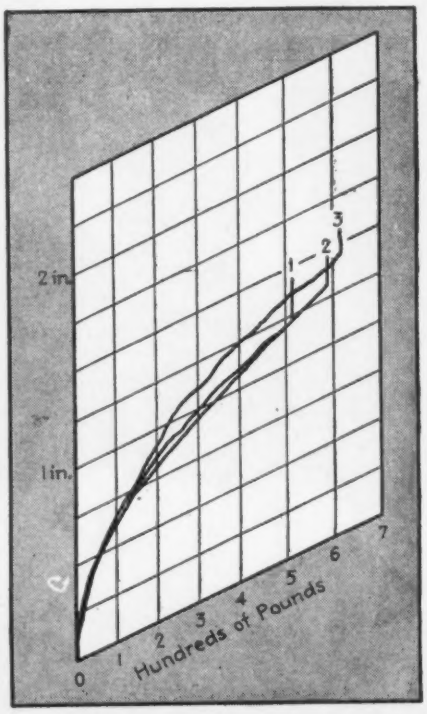


*Chart showing breaking strength of a fabric tested by different methods.*

A study of the accompanying chart, I believe, will convey more vividly what actually takes place when a specimen is being broken than I would be able to describe in writing. In studying the chart you will note that stress curve No. 1 has a fairly uniform increased rate of loading; this test was made by tightening the jaws at the beginning of the test.

Stress curve No. 2 was made according to the method that is used in our laboratory and, I believe, according to the method used by the author of the article under discussion. It is to be noted that the rate of loading is not increasing as uniformly as in curve No. 1, but after reaching the critical point, in this case, 400 lb., the jaws were tightened and no other tightening was necessary to complete the test. It is also to be noted on this test that after the critical point is passed, the increased rate of loading is just as uniform and as low as the rate of loading is on curve No. 1.

In the third test, and the one on which the highest break was obtained, as indicated by curve No. 3, the jaws were tightened gradually throughout the stress curve. This latter method, I believe, has a tendency to jerk the pendulum forward and will show a tensile strength that is unreliable.

Ordinarily, one would think that method No. 2 would give a much higher rate of loading than the method of applying all the pressure at the beginning of the test. This is true up to the critical point, but after this point is passed and no further tightening of the jaws is needed the rate of loading, as can be seen from the chart, tends to follow the same rate of loading as on the specimen where the jaws

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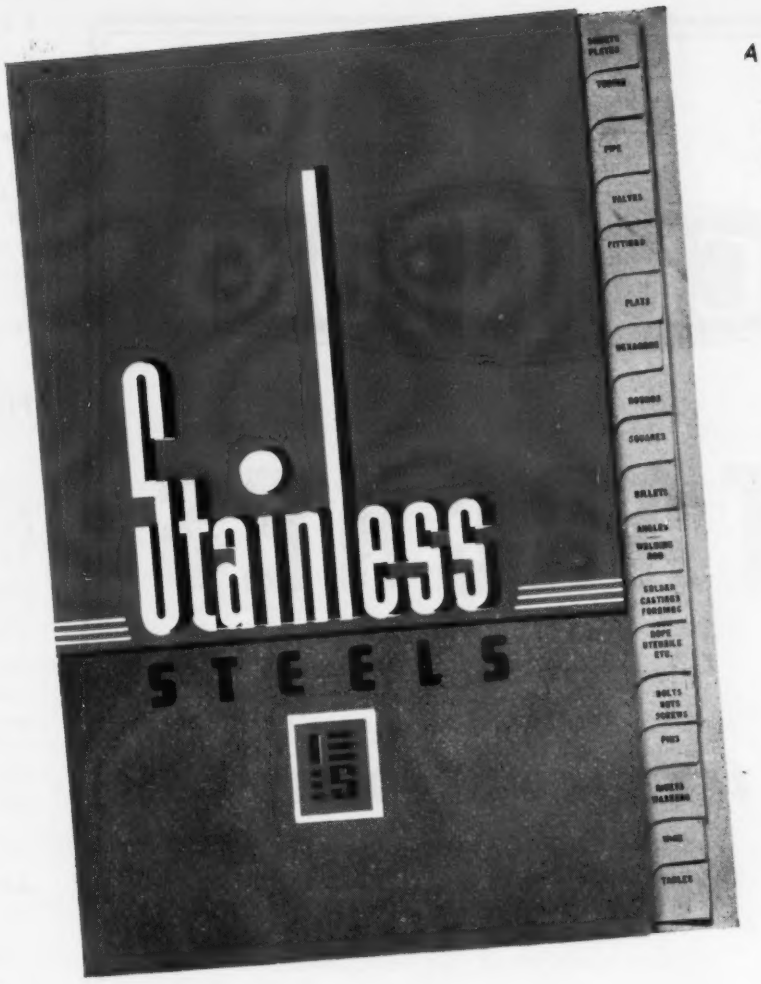


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were tightened at the beginning of the test.

This is one subject I, too, would like to see a great deal of discussion on, and if there is someone who has a better method for obtaining the maximum or true tensile strength of a fabric, I, like R.W.M., would like to know the procedure.—(R-36)

## Filling Trouble

I should like to see a discussion in the Round Table on what causes slack picks, kinky filling, and tight picks. Our looms are Draper Model XD and XK. Speeds are 160 to 182 picks per min. We use Dayton pickers, weaving viscose, acetate, and Nylon yarns. The yarns are 120- to 300-den. bright, semi-bright, and dull lusters. We are using the same filling as warp, and are not mixing yarns. One weaver said that tightening the protection rod will help, but I cannot see how it is possible.—(R-33)

## Larger Picker Laps

The largest possible picker lap, as mentioned in the December issue, has been very well tested by the writer, who has found that under most circumstances the limits are governed by factors that exist after the lap leaves the pickers.

Lap weights usually are not an unusual burden to the lap trucker, but many times the lap trucks are of such construction that laps of greater lengths will be needlessly torn or damaged in handling or racking on the lap trucks, thus an extraordinary amount of waste is made.

Picker frictions must, first of all, be in the best of condition to obtain compact laps that can be handled satisfactorily.

Card lap cheeks will take a lap up to about 22 in. in diameter as it hangs in the lap racks or on the lap trucks, thus a visible limit exists at this point. Also laps loosen up, or grow in diameter after leaving the picker and this will bar the production of laps of much greater length than are now being used.

In general, 14 oz. laps are limited in lengths to some 60 to 64 yd., but most generally, the practice is to limit them to 51 to 56 yd. Preferably, I would choose a lap of 58 to 60 yd. to gain the best advantages. This may require rebuilding of the lap trucks but it is not a big task. This 60 yd. lap will roughly weigh 55 to 56 lb. gross, and if good help handles it, less waste will

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be made. More yards of good lap are obtained before the last yard of heavy lap gets into the work, thus reducing variation; also, less picker doffs are required, resulting in fewer piecings on the cards and draw frames and, in general, better running work.—(R-35)

## Personnel Department Should Hire and Fire

Foremen should not hire or fire. C.E.W. is right in his contention in the August issue that personnel men should hire and fire workers instead of the foremen. Supervisors should not be burdened with interviewing new workers, but they should have the right to reject any new worker sent him by the personnel department. If a foreman recommends discharge, the personnel department should be advised without the knowledge of the worker. By handling recommendations this way, the personnel man can decide the case on its merits and retain the worker without making the foreman lose face. Also, if a foreman refuses to work a person, he should not be forced to do so.

Grievances should always be settled by the foreman as a personnel man cannot possibly understand and weigh all the conditions leading up to the complaint as well as can the foreman. Besides, the foreman loses prestige with his workers if someone outside his department must always decide. Good foremen are constantly on the watch for real and imaginary grievances, and settle them before they grow into complaints.—(R-29)

## Spring Needles vs. Latch Needles

Last week I was browsing around the local Public Library and ran across a 1924 edition of the Knitting Mill Handbook. I found it very interesting, in spite of its age, and—yes, you guessed it—I did find a number of things in it that I didn't know about a knitting mill.

However, on page 62, under the subtitle, "Circular Spring-Needle and Latch-Needle Knitting," the author said: "The needles of this machine (spring needle) knit up, whereas the latch needle usually knits down." So far that is correct; but the next two sentences seem to be in error: "The claimed advantage of knitting up is that the right side of the fabric is always outside in full view of the knitter who can thus easily detect any imperfections in the cloth. The latch needle

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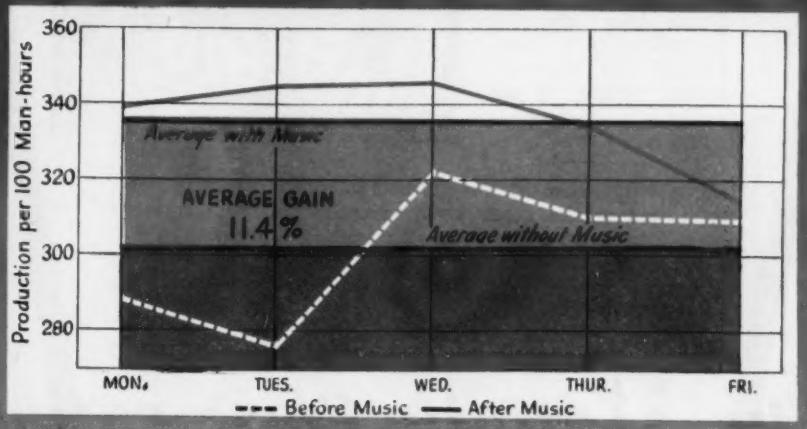


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usually knits the right side of the cloth on the inside."

On either the spring or latch needle the wale side or right side of the fabric is always next to the needles when the stitches are cast off. Since the circular spring-needle machine for knitting cloth for underwear and outwear knits up—that is, the take-up rolls are located above the needles and take the stitches upward—the knitted tube comes in from the needles wrong side out, and must be turned on a turning machine before it can be inspected. And the cloth as it comes from the needles is not always in full view of the knitter, because the take-up roll revolves too fast for the knitter to detect imperfections in the cloth.

On the latch-needle machine, which usually knits down, the fabric passes down through the cylinder and since this is just the opposite of the spring-needle method of taking the stitches away, the right side is on the outside of the knitted tube.—(R-7)

## Larger Picker Laps Cause Trouble

In regard to the question of M.T.S. in the December issue covering the largest picker lap possible to use with the thought of possibly increasing the size of the lap so as to reduce doffing time at the picker and cleaning time at the cards, I believe he is headed for trouble if he tries to increase greatly the size of the lap. The lap size has been determined after much experimenting by card room men. There must be a pretty good reason why it is run at the present size.

If a larger lap is run, the chances are that more trouble will be encountered from operatives pulling off the loose, outer layer of cotton on the lap that results from the pressure being decreased at the picker as the lap grows. It seems almost certain that any saving derived from less removing and lopping up will be offset by operatives making excessive waste. During the present emergency, it is difficult to get new operatives to handle laps so that they will not be damaged; and with the larger the lap, the greater is the chance of damage.

Our mill runs about a 20-in. diameter lap which weighs approximately 46 lb., and the weight per yard is 13 oz. As far as I am concerned, I do not feel that there is anything to be gained by increasing my lap size, and although some mills run laps heavier than 46 lb., I am in favor of sticking to the present weight and diameter so as not to increase my cost and waste percentages.—(R-41)

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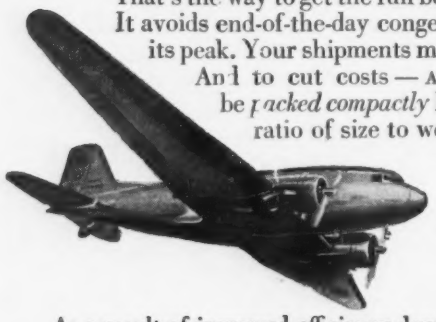

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# Questions AND Answers

## Kinked Woolen Yarn

Technical Editor:

**Enclosed are ends of woolen yarn cut from a warp. I would like to know what is the trouble with this yarn. It seems to kink and spiral with a back twist. This yarn has been steamed and spooled and and when put in a warp we experience this trouble. Roving weight of 50 yd. is 550 grains, and the weight of 50 yd. of spun yarn is 455 grains. Twist is 5 t.p.i. I have tried drafting this size of yarn using different percentages, but this layout seems to be the best. (8964)**

Judging from the small sample inclosed, it is assumed that this yarn was mule spun.

In testing the twist considerable variation was found at different places in the samples. The kinky sections showed from 4.5 to 6 t.p.i., while the unkinked sections showed from 3.5 to 4.5 t.p.i. It is believed that this variation will continue in longer lengths of yarn.

Opinion is that the kinks are caused by improper settings on the mule. On heavy yarns it is a common practice to cut down the draft to eliminate the possibility of the heavy roving pulling through the rolls at the end of the draw. However, by cutting down on the draft and not making necessary adjustments, more serious faults may occur. This will cause what is known as "spindle point"; that is, when yarn spindle points, it causes the yarn at the top of the spindle to receive excess twist while the rest of the draw receives less twist. This theory is born out by the short kinky places in the yarn and also by an experiment made to duplicate the defect. This experiment was made by deliberately causing the yarn to spindle point. The yarn was then steamed for 15 min. in a conditioning oven and the results were exactly the same as on the samples submitted. Under tension the yarn showed no kinks, but when slackened the kinks appeared.

Long steaming tends to set the

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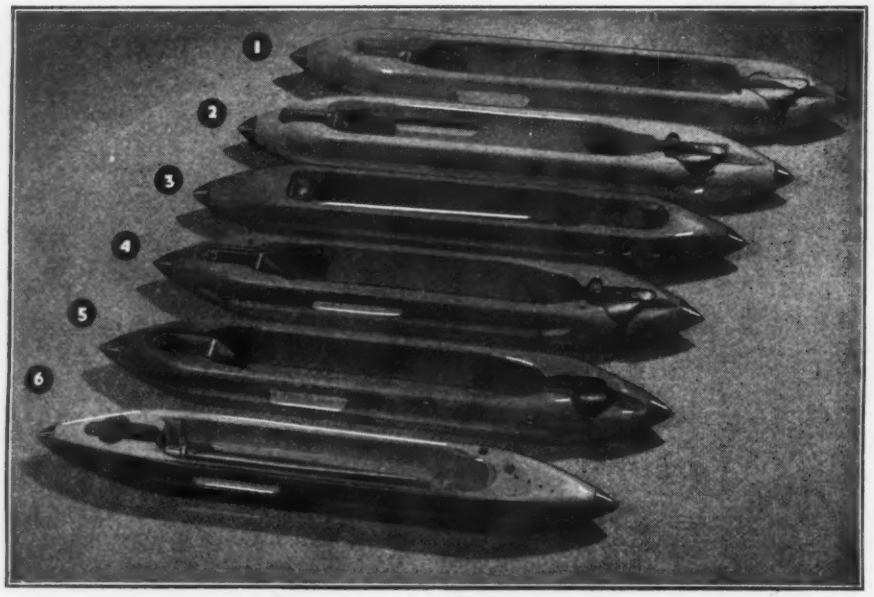


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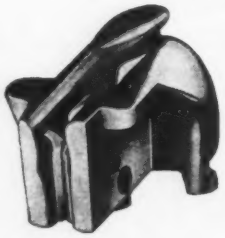

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kinks and makes them more noticeable, perhaps the yarn sample submitted was oversteamed.

The inquirer states that he has experimented with different drafts and finds 550 grain roving the most suitable. This writer believes that 550 grain roving spun to 455 grain yarn or approx. 17% draft is not enough for an all-wool stock. The draft should be at least 20% and better still, 25%. The longer the draft the more even, smoother and stronger yarn you get and also the more it will increase the card room production, an important item on heavy, low twist yarn. Should conditions not allow longer drafting the only possibility then is to make suitable adjustments on the mule to eliminate spindle points. These adjustments may mean speeding up the rolls, spindles and carriage and it may even be necessary to raise up the spindles. The mule is a flexible machine and many other changes could be made which would help conditions such as this.

Another answer from a different source follows:

It is evident without a very close examination that those points that have corkscrewed, or kinked, contain much more twist than is true of that portion of the yarn that is not kinked.

This recalls an experience when, several years ago, a similar problem occurred on some new large-package, high-speed mules. At the time the installation was made, spools were changed from wooden drums to metal drums. This resulted in some slippage of the roving on the metal drums, consequently during the process of mule spinning when the spool drum would stop, the carriage would con-

*Woolen yarn that gave trouble in warping because of kinking.*

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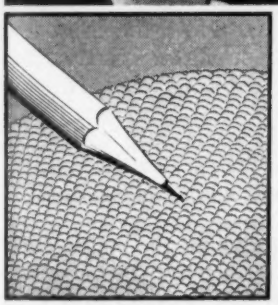
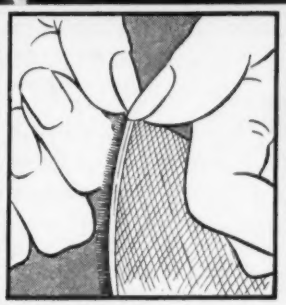
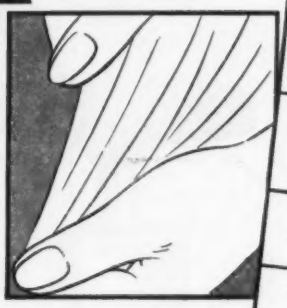


● When used for Backing, Ubatex locks the pile firmly to the fabric base.



● In Combining operations, Ubatex provides a positive, one-coat bond.



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| *Film Strength* | Ample for all backing, combining and coating operations so far tested. |
| *Drying Speed* | Slightly slower than latex but faster than all other synthetics we have tested. |
| *Setting Speed* | Grab is quicker than with latex. |
| *Pressure Sensitivity* | Negative. |
| *Color* | Naturally clear. Does not stain. Can be pigmented or dyed. |
| *Luster* | Excellent sheen. |
| *Laundering Resistance* | Appears to stand up well. |

An original development of the UBS Laboratories, Ubatex is a completely synthesized latex (not a dispersed resin compound) that appears and handles similar to unvulcanized latex. Definitely superior to latex in its ageing and waterproof qualities, Ubatex is proving ideally suited for many backing, combining and coating operations. Write today for an experimental sample — describing materials and application methods involved.

**Address all inquiries to the Union Bay State Chemical Company, Rubber Chemicals Division, 50 Harvard Street, Cambridge 42, Massachusetts.**

UBS

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*Chemical Company*

*Serving Industry with Creative Chemistry*

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SIMPLICITY OF DESIGN MEANS EASIER MAINTENANCE . . .

# LENDING A HAND *to the* MAINTENANCE MAN

● He can use plenty of help these days . . . his job of keeping the machinery of production going takes all he can give it. And among his most vital needs are valves that won't take a lot of costly time out for repairs . . . valves that he can depend on for uninterrupted performance.

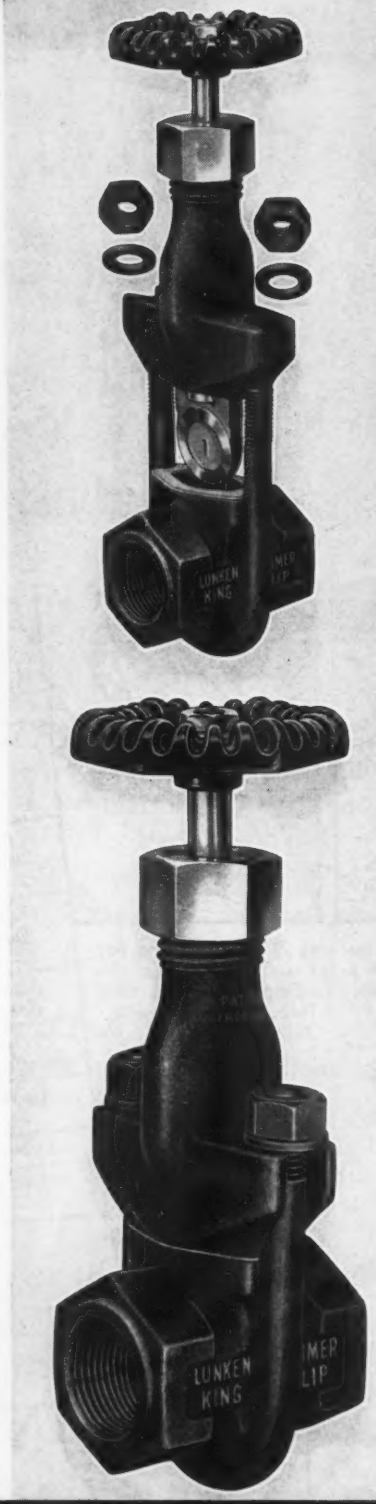
Such a valve is the Lunkenheimer "King-clip". Simple in design, exceptionally sturdy in construction, the "King-clip" is at its best when the going is tough. Also, it's a valve that lends itself to easy maintenance.

Note the illustration. See how easily the "King-clip" can be taken apart . . . how it simplifies maintenance. And when repairs are necessary, you can be certain that any replacement part will fit accurately—Lunkenheimer precision-gauged manufacture gives you that assurance.

Let your Lunkenheimer distributor help you with your maintenance, repair and operating problems. His facilities are at your call.

**YOU CAN TAKE IT APART IN A JIFFY . . . . . .**

Simply unscrew two nuts at top of clip and entire bonnet-stem-disc assembly can be lifted from the body with complete accessibility for inspection or repairs.

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**LUNKENHEIMER VALVES**



tinue to back out to put the required amount of draft in the yarn. At this point the roving would, in some instances, slip and slip unevenly, based on the build up of the roving around the wooden and the metal bar. As the mule would complete its twist and start backing into the carriage to the spools there would be a momentary pause and numerous kinks would appear in the yarn. Not every end would necessarily be the same, but there would be a variation of twist. The way found to correct this was to roughen the barrel sufficiently so that the roving would not slip.

It is entirely possible that this yarn may have been spooled prior to warping with varying degrees of tension from end to end on the spool. If that be true, when that yarn is unloaded from the spools on to the reel and then to the compressor for the warp beams, that varying tension will continue, resulting in loose and tight ends on the loom beams, and naturally a loose end will sometimes release its twist and cause corkscrew kinks.

## Scouring Knit Goods

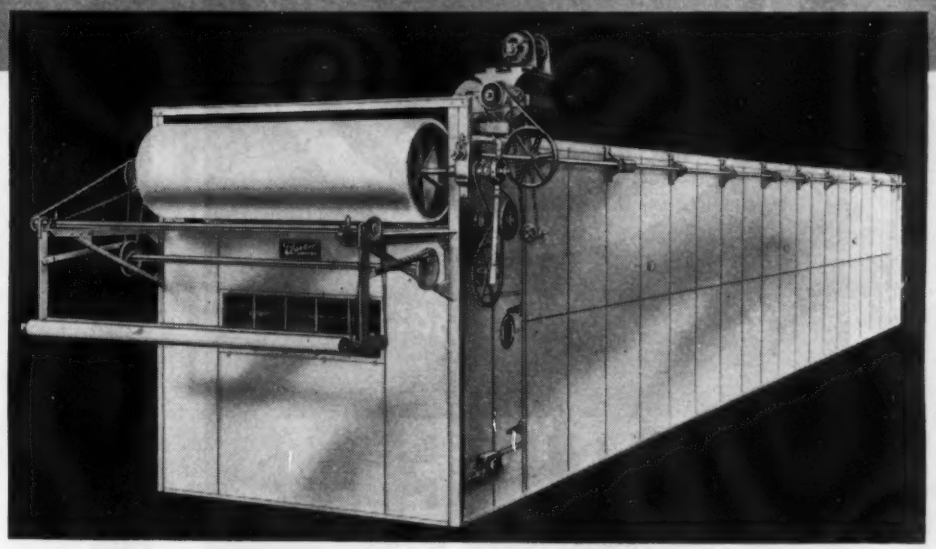
The writer has used a much milder treatment for scouring knit goods than that outlined in the October issue in reply to inquiry 8931. Any hot bath, especially while using soap and soda ash under the pressure of the washer rolls makes control of shrinkage to 3% difficult.

On the other hand, the cold scouring method is effective in properly cleaning the goods, besides protecting the colors and bringing out a lustrous appearance on the finished fabric. The following procedure is recommended by the writer:

Make up in a tank or barrel a solution of 4 oz. of soap and 2 oz. of soda ash to each gallon. For example, if the tank holds 100 gal., use 25 lb. of soap and 12½ lb. of soda ash. Place the soap and alkali in the tank, and just cover with water. Bring to a boil, and hold at least 2 hr., shut off steam, add cold water and stir constantly until the tank is filled.

Enter goods in washer, wet out with cold water for a few minutes, open gates so as to drain goods as dry as possible, and then close the gates. From three to six pails of soap and alkali solution, according to weight of fabric are added and will work up into a good healthy lather. A 20-min. run will saponify or emulsify any oils that have been used on the stock—wool or cotton, or wool and rayon. A 30- to

# Improved Piece Goods Drying with the PROCTOR LOOP DRYER



As cloth enters Proctor Loop Dryer it is formed into loops over conveyor girts. Heated air, at high velocity, is then directed down into each loop. Material is thoroughly and uniformly dried, automatically and without tension.

With a view to the postwar period, when many of the machines which have been restricted will once again be manufactured, Proctor engineers have developed many refinements in the design of certain standard types of dryers for the textile industry. One of these machines is the Proctor Automatic Loop Dryer, for the drying of dyed or finished piece goods without tension. Improvements in the looping device which are designed to increase ease of adjustment and mechanical operation will greatly enhance the efficiency of the loop dryer of tomorrow. Other improvements in design have to do with the sliding baffles; include an exterior adjustment which makes it possible for the operator to see the exact amount of air circulation taking place inside the dryer. An improved lighting arrangement at the feed end of the dryer enables operators to observe the travel of the goods. Numerous operating refinements are incorporated which will otherwise improve this already tried and proven machine.

***INFORMATIVE BOOKLET***

This recent, comprehensive booklet "PROCTOR DRYING MACHINERY for the Textile Industry" is yours for the asking. It contains all the latest developments in PROCTOR DRYERS for use in your industry.

## PROCTOR TEXTILE DRYERS

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45-min. run will improve the feel of the goods and give them a good hand and set them against subsequent shrinkage. If the lather has become stained at the end of this run, either from the dye or oils used, the gates should be opened and the suds allowed to escape, using no water. The gates are closed and about two or three pails of soap solution added for each piece. This solution will work up into a clean, white, foamy lather. Run 20 min., turn on cold water, and rinse until phenolphthalein test shows no alkali present. After extracting the fabrics should preferably be dried on a pipe dryer with basket to control and set the width with the needle line to act as a selvage. For a nice finish, run through a calender, with the proper size of spreader, and a good head of steam before entering the calender rolls. Roll up pieces and set aside until the next day before examining. This is most important in setting the goods against possible shrinkage, and practically insures a more or less permanent finish.—David Welsh.

## Cracky Combination Cloth

**Technical Editor:**

**Inclosed are two cuttings of a romaine, one of which is cracky or "grins." Both pieces were of the same gray construction (47 in., 52x38, 150/100 rayon and acetate combination, warp and filling), and were finished together. This cracking had previously been felt to be in the finish but these cuttings seem to indicate something else. Can you tell us the probable cause and, how it can be overcome? (8965)**

Visual examination shows one cutting to be much worse than the other in regard to openness of the weave resulting in an inferior appearance, as sometimes happens when identical cloths are finished differently, such as when one is held out more in finishing. That is not true in this instance since you state the gray construction is identical, and we find the finished count also to be the same in each.

The condition mentioned could be caused by differences in twists and that is true here. The satisfactory cloth has S-twist in both warp and filling, whereas the cracky piece has S-twist warp and Z-twist filling. Twist-direction applies both to the single end crepe and to the ply. Correction of future cloth should not be difficult.

At times the condition complained of is caused by insufficient twist, principally in the crepe component or by improper soaking. When this occurs, however, it is generally associated with

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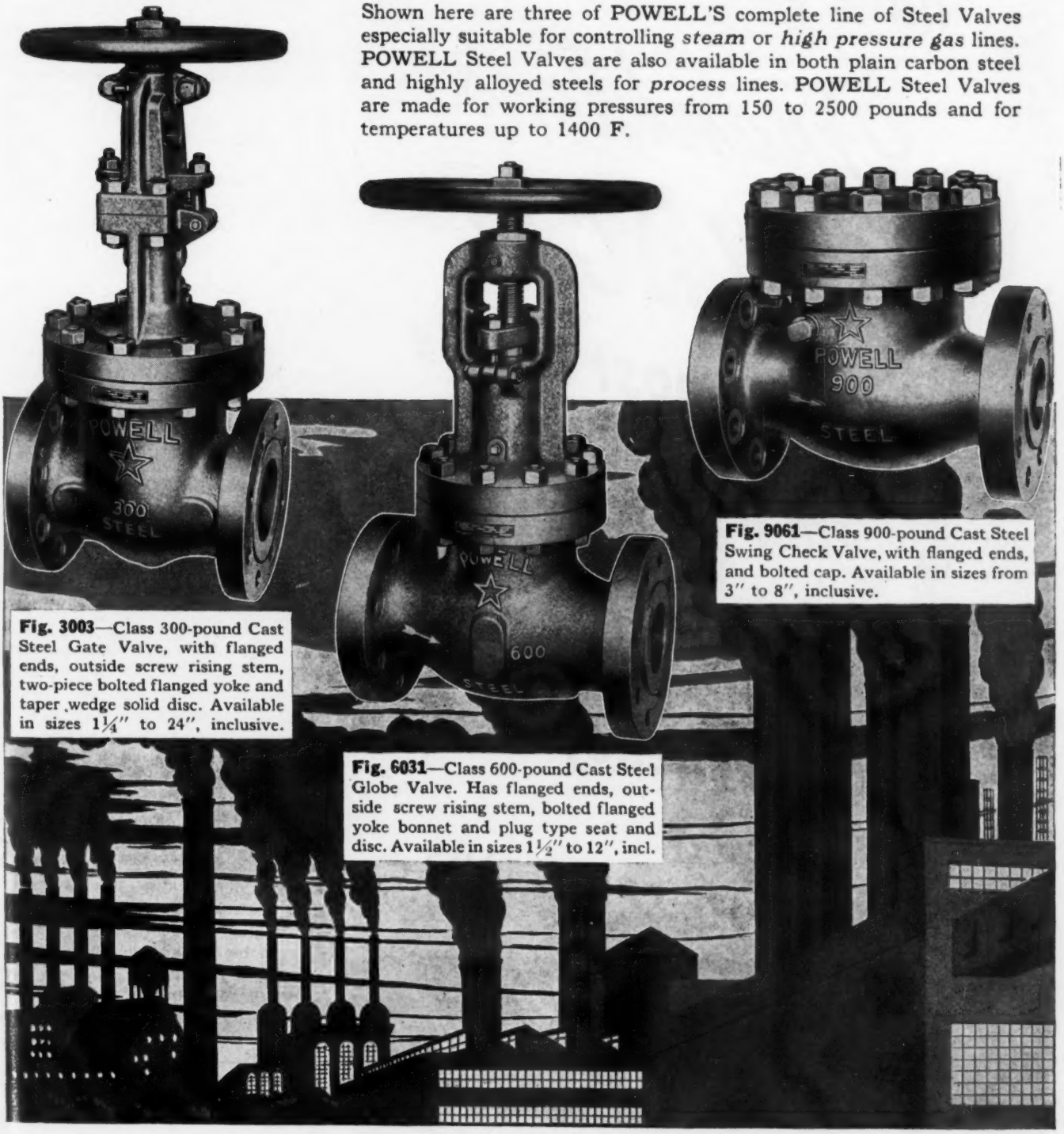
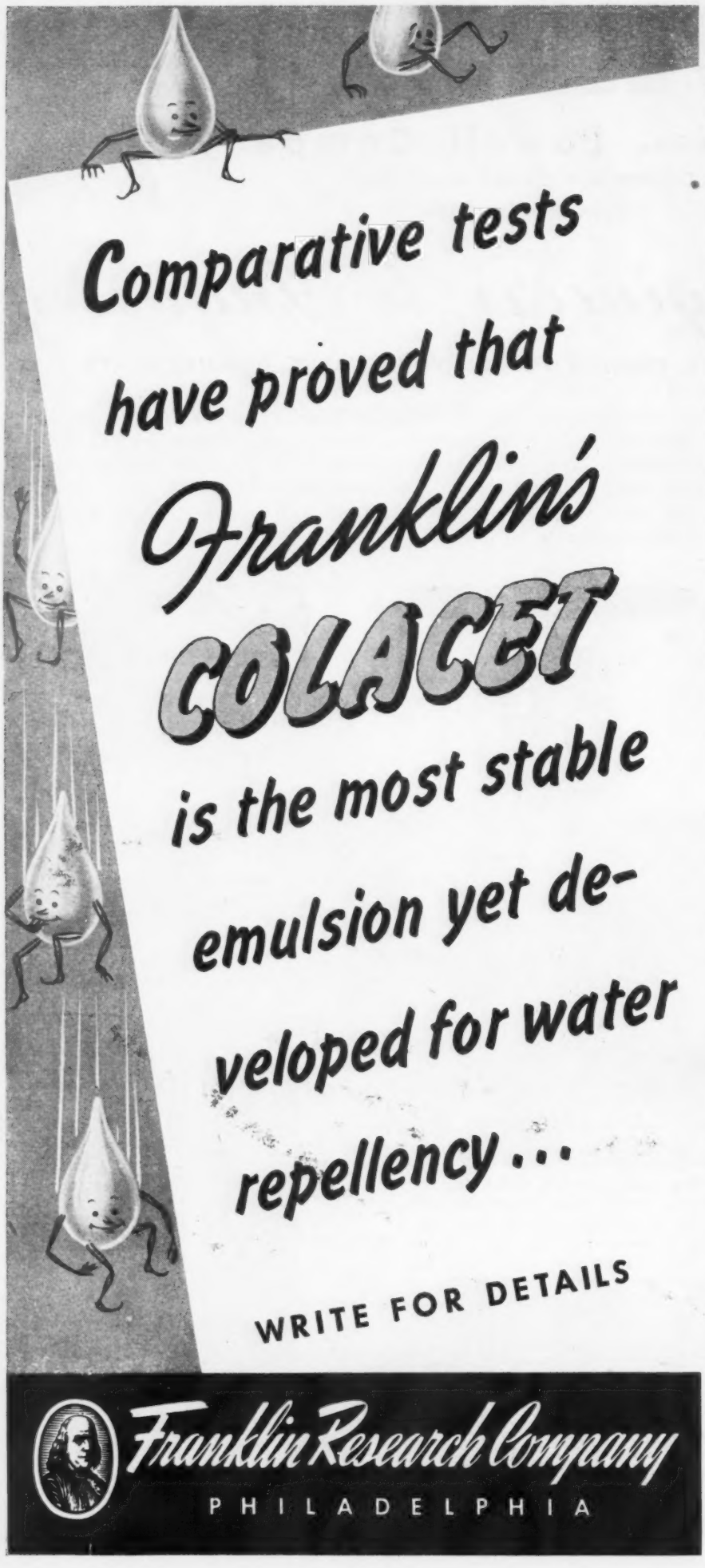



**Fig. 3003**—Class 300-pound Cast Steel Gate Valve, with flanged ends, outside screw rising stem, two-piece bolted flanged yoke and taper wedge solid disc. Available in sizes 1¼" to 24", inclusive.

**Fig. 6031**—Class 600-pound Cast Steel Globe Valve. Has flanged ends, outside screw rising stem, bolted flanged yoke bonnet and plug type seat and disc. Available in sizes 1½" to 12", incl.

**Fig. 9061**—Class 900-pound Cast Steel Swing Check Valve, with flanged ends, and bolted cap. Available in sizes from 3" to 8", inclusive.






a different shrinkage in the boil-off or a different finished count, and can thus be ascertained.

## Weaving Slub Yarn

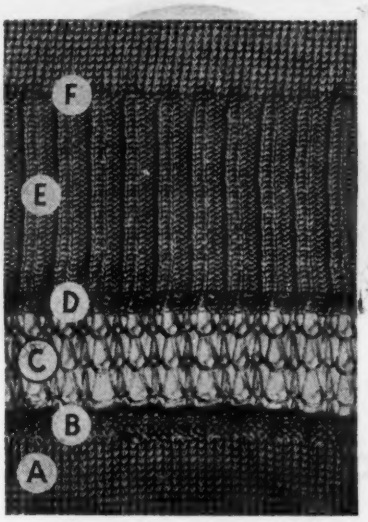
**Technical Editor:**

**We are having difficulty weaving slub yarns with one shuttle as the slubs seem to form a regular pattern. Is there a formula to determine the exact ratio between reed and slub spacings so as to figure the correct spacings of slubs in the filling yarn to permit the weaving of cotton slub yarn with one shuttle, but yet avoid the formation of patterns in the cloth? (8955)**

One authority states that this action is a result of regular spacing of the slubs in the yarn, rather than by the length of the spacing between the slubs. If there is a formula for figuring out the length of a regular spacing of the slubs that would prevent filling patterns in the cloth, we are not familiar with it. However, it appears that it would be almost impossible to determine any spacing of the slubs that would not repeat in the cloth. The only way to prevent a filling pattern of the slubs in the cloth is to space the slubs at irregular intervals on the yarn. With proper slub forming motion on the spinning frame the slubs can be made with several different spacings while the average number of slubs in a yard remains the same. This spacing is generally made with a controlling chain, which operates the slub forming motion by irregularly spaced high links.

Some mills do not use a slub forming motion, but simply remove the middle rolls in the spinning frame. However, the size of the slubs so made can not be controlled, resulting in some slubs being smaller than others. Also, the number of slubs per yard cannot be controlled by this method.

Another of our technical experts states that regular spacings of slubs on a single shuttle loom can only be overcome by experimenting with the slub spacing and reed width, if the slubs are spaced relatively far apart. For such, try reeding in or out one or more dents at a time until the minimum pattern results and if the regular pattern is not broken, change the spacings. The flake spacing and multiples of a reed spread may be identical in a number of instances. The method of overcoming regular slub spacing is to use spaces that are not multiples of the reed spread or within the 1, 2, or 3 in. of it, depending upon the length of the flake. Reed spreads that have few multiples such as a 33 in. or a 35 in. would be less likely to cause slub patterning.




*Section of fabric between two sweaters produced on Leighton Transfer Machine.*

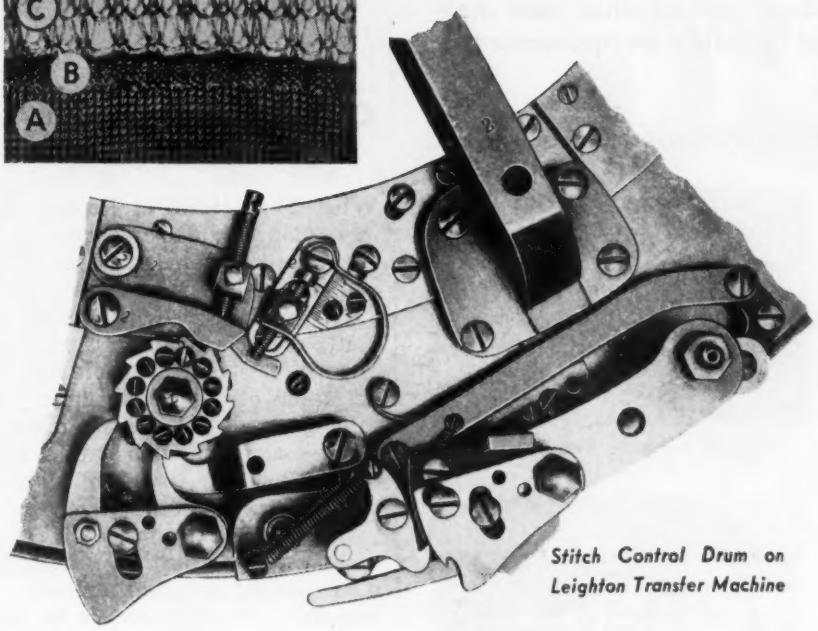
# Better Stitch Control for Knitted Outerwear

On the Leighton Transfer Machine there is a stitch control drum for each yarn feed. This drum plays an important part in the operation of the machine—especially when soft spun yarns are used.

Each drum has separate control for cylinder or dial needles, which means an individual adjustment is available for any feed at any time.

A maximum of 12 changes are provided on each drum for the production of one garment. When all 12 adjustments are not required, the extra screws can be used as idlers.

Raised links on the stitch adjuster chain will automatically raise a cam that will turn the stitch control drum. Changes are made automatically without stopping the machine to give maximum production.



*Stitch Control Drum on Leighton Transfer Machine*

## Setting for Production of Sweaters

**A.** Jersey stitch—body of sweater. **A brass screw** is used on the stitch control drum for identification

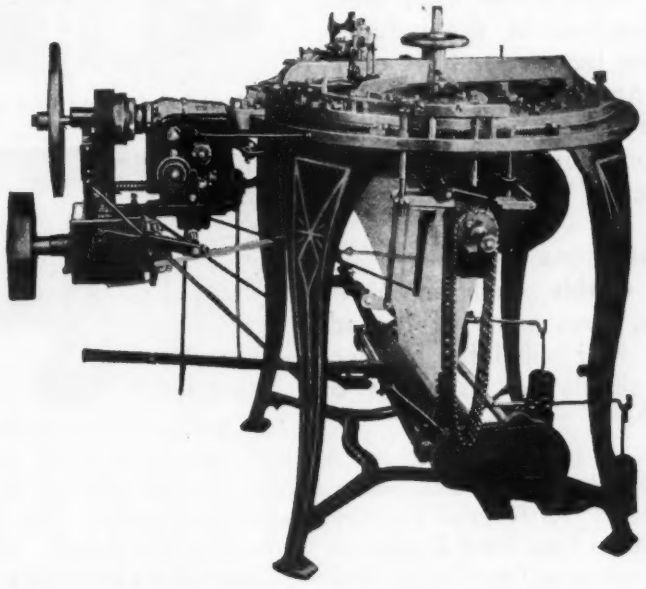
**B.** **1st screw** on the drum is for the tight rib stitch
**2nd screw** is for 4 welt courses

**C.** **3rd screw** is for 4 rib courses—the last one is the first course of the selvedge

**D.** **4th screw** is for 4 more welt courses, then it is ready to rack back

**E.** **5th screw** is setting for rib section

**F.** **6th screw** is stitch setting for transfer from rib to jersey
**7th screw** is used for the jersey stitch
**8, 9, 10, 11, and 12th screws** are idlers and set the same as number 7. Number 12 is brass



**LEIGHTON MACHINE COMPANY**
ESTABLISHED—1873

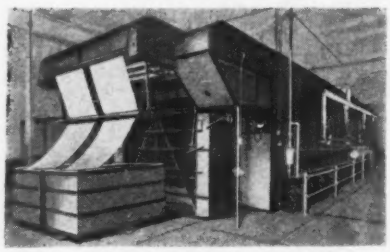
**LEIGHTON**

**MANCHESTER NEW HAMPSHIRE**
INCORPORATED—1894

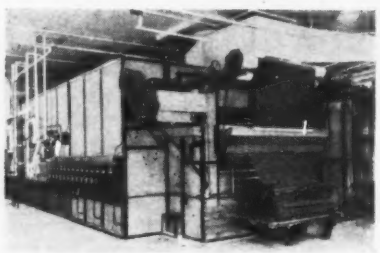
# Buy Your Ticket to the End of the Line

FOR economy's sake . . . skip all way-stations on the road back from obsolescence in Drying Machinery and Equipment. Go *all the way* . . . to the makes and models representing the ultimate in improved design, operation, performance and maintenance, and thus assure the longest possible postponement of future replacements.

Finishing plants and departments taking this wise course will find "NATIONAL" ready with machinery and equipment proven to produce results never before accomplished in textile drying. In Piece Goods dryers, especially, higher speeds, better quality uniformity and lower maintenance costs will provide every means to meet post-war demands with unprecedented efficiency and economy.



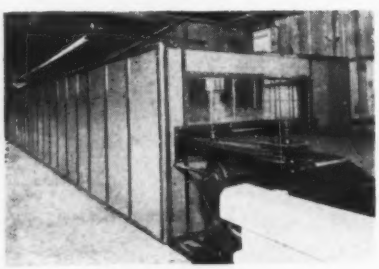
"National" Automatic Piece Goods Dryer



"National" Automatic Piece Goods Dryer

Looking at "NATIONAL's" war-production record, and knowing the history of the company's progress toward the high place it has reached in the industry, peace-time buyers can have every confidence in "NATIONAL's" ability to furnish better machines for better drying just as soon as the "all clear" is sounded.

In the meantime, suitable priorities will enable qualified plants to secure, now, many of the advantages that will later be generally available to buyers of "NATIONAL" machines.



"National" Straight Run Tenter Dryer

**PRODUCTS:** Automatic Piece Goods Dryers. Straight Run and Return Type Tenter Systems. All Types of Yarn Dryers and Conditioners. Truck Type Skein Dryers. Apron Type Stock Dryers and Carbonizing Equipment. Print Goods Dryers. Continuous Type Carpet Dryers. Chemical Dryers. Truck, Tray and Conveyor Type Test Dryers for Textile, Chemicals, Food Products, etc.

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***New England Agent*—C. H. Ingalls, Providence, R. I.**


# News OF THE MONTH

**What They Heard at Recent Meetings.** Convention speakers during the last month commented on current matters as follows:

"If the industry is to prosper, yes, if it is to continue its existence, it is essential not only to coordinate the operations of the several interests but to expand substantially two major activities—sales promotion and research."—Oscar Johnston, president, National Cotton Council meeting, Jan. 25.

"Production of underwear is now running 20% lower than is needed to equal civilian requirements, and, unless there is improvement in manpower and material situation, 1944 will show a decline in underwear and other textile production as compared with 1943"—Ernest L. Olrich, Munsingwear, Inc., at N. R. D. G. A., Jan. 12.

"There is too little thinking toward establishing conditions so it will be possible for men who return from the war to create jobs of their own, and too much thinking grounded on the depression of the '30s . . . a steady flow of merchandise over the counters of this country means steady employment"—Robert Amory, Nashua Mfg. Co., Assn. of Buying Offices, Jan. 10.

"We do not want to have Lend-Lease tool up textile interests abroad. We are willing to produce all the goods needed but we do not want to give away our facilities to produce."—Hugh Comer, Avondale Mills, at Wholesale Dry Goods Inst., Jan. 19.

"It is in the best interests of the Government as well as the wool growing and manufacturing industries, that the United States owned portion of the foreign wool stockpile should be used now while total consumption is large enough to absorb this wool with the least possible effect on the market."—K. W. Marriner, Wool Branch, WPB, at National Woolgrowers Association, Jan. 24.

"Based on current operating levels

# PRE-SOLD

It is no trick to buy a water repellent. But can you sell it? On the answer to that question depends your profit in this feature.

If the repellent you use is unknown you've got to put on a sales talk, and push it. If it is known and valued, as is "Cravenette" you are saved this effort. In short "Cravenette" is pre-sold and because of this your fabrics, treated with "Cravenette" water repellents will sell more readily.

Naturally, "Cravenette" will meet all your technical requirements, too. For instance, our "Cravenette" CBC water repelling preparations are easily applied by the one-bath method for either all-wool, or all-cotton fabrics; they are stable under a wide range of temperatures, and liquid at both high and low temperatures. Needless to say, with more than 50 years of experience back of them, "Cravenette" repellents also are accurately compounded, odorless, and have a minimum effect on the appearance and feel of the fabric. And, of course, they can be applied either from a washer or standing bath.

However, you would expect these features in any repellent of good quality. The big point of difference in "Cravenette" is that your customers know it and are glad to have it because, with the "Cravenette" trademark on the fabric or in the garment a real sales feature is provided. More to the point, both you and your customers can have this advantage at a cost that is no more than you would pay for repellents lacking this advantage. Write us and we will be glad to go into particulars.

*Your fabric treated with*

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## CRAVENETTE

*water repelling preparations*

## SHEDS SHOWERS

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THE CRAVENETTE COMPANY, U. S. A.
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cotton goods production is probably running on the basis of 5% less than 1943. If continued this would represent a decline of probably 1,000,000,000 yd. below 1942 production."—Frank Walton, Catlin Farish Co., formerly of WPB, at Wholesale Dry Goods Institute, Jan. 20.

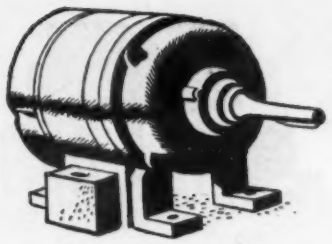
**More Winners of the "E".** Among those awarded the Army-Navy "E" since last report are the following: Nashua Mfg. Co., Bower Division, Lewiston, Me.; Burkey Underwear Co., Hamburg, Pa.; Lion Knitting Mills Co., Cleveland, Ohio; Chipman Knitting Mills, Easton, Pa.; American Silk Mills, Orange, Va.; Anchor Duck Mills, Rome, Ga.; Masland Duraleather Co., Philadelphia, Pa.; Dorman Mill, Parsons, W. Va.; Hayward Schuster Woolen Mills, East Douglas, Mass.; Hayward Woolen Co., East Douglas, Mass.; Swift Spinning Mills, Columbus, Ga.; Bath (Me.) Mills; Springs Cotton Mills, Lancaster, S. C.; Tennessee Eastman Corp., Kingsport, Tenn.; Borden Mills, Kingsport, Tenn.; Swift Spinning Mills, Columbus, Ga.

**Finishers Discuss Problems.** War and postwar problems were discussed at the annual meeting of the National Association of Finishers of Textile Fabrics held last month in New York. R. W. Arrington, of Union Bleachery, was elected president; W. R. MacIntyre, of Joseph Bancroft & Sons Co., was elected chairman of the executive committee; L. H. Ballou, of Slatersville Finishing Co., and William Berry, of Ware Shoals Bleachery, were elected vice presidents; and Miss Alice C. Moore was reelected secretary-treasurer. The association will appoint a postwar planning committee.

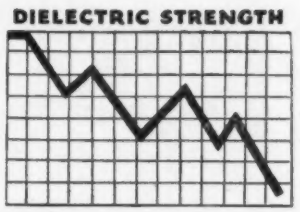
**To Survey Textile Requirements.** The Combined Production and Resources Board has announced formation of a textile committee to survey wartime and relief requirements and relate them to productive capacity. Membership of the new committee is as follows: for the United States, H. L. Bailey, president, Wellington Sears Co.; for the United Kingdom, Col. W. A. Grierson, DSO, Director of the Manchester Chamber of Commerce, chairman, Greenhalghs & Shaw Ltd., and director Kirkless Ltd.; for Canada, S. G. Dixon, president Courtalds (Canada) Ltd., and Administrator of Rayon, Wartime Prices and Trade Board of Canada.

**New Strong Rayon.** It is reported that a new type of strong rayon, identified as Fiber G, has been developed by the

**1.** ***Moisture can play hob around electrical equipment.***



**2.** ***It can be absorbed into the insulation and lower its dielectric strength.***




**3.** ***It can eventually result in all sorts of maintenance misery, as every engineer too well knows.***

**4.** **BUT THERE'S A PRACTICAL SOLUTION TO THE MOISTURE PROBLEM!**

# It's an insulation of glass...plus varnish

The *fibers* in all Fiberglas* Electrical Insulations are glass.

That's why they do not absorb moisture and thus they provide a better base for impregnation. As a result, the impregnated Fiberglas provides high resistance to destructive effects of moisture.

Similarly, most corrosive vapors do not attack this durable insulation, for the simple reason that glass fibers are unaffected by oils and acids (except hydrofluoric).

Before the war, alert engineers were skillfully adapting Fiberglas to many kinds of equipment working under tough conditions. Fiberglas gained wide acceptance as a superior electrical insulation.

For the same reasons, it has gained wide acceptance in the Army, Navy, and war industries for many types of motors, generators, and transformers—for wire and cable in planes, tanks, and ships.

As the production of Fiberglas Electrical Insulation is being constantly increased, more and more of this material is becoming available for more applications.

Many design engineers, now working with Fiberglas, are also looking ahead. They see how they will get outstanding performance with this glass material in all kinds of electrical equipment for postwar markets. They also know that Fiberglas gives them all the standard forms of electrical insulation to work with.

Those who have repair or rewind problems will also find it helpful to consult their electrical distributor regarding the possibility of using Fiberglas.

*Owens-Corning Fiberglas Corporation, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.*

**FIBERGLAS***

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**ELECTRICAL INSULATION**

## HOW FAST AND SAFE WILL SAMPLES DRY?

**Samples are safe from scorching without constant attention of operator**

# EMERSON OVENS

10 Basket Oven

*Emerson ovens* are electrically heated and temperature is controlled by thermostat.

Fans provide air circulation in ovens.

Bone-dry weights determine moisture regain in fabrics, yarns, and raw materials.

Sensitive scales for weighing samples within the oven can be operated without opening the oven door.

Savings can be made by checking specifications for each manufacturing department.

***10 basket oven for samples of one-half pound or more.***

10 cylindrical baskets
8" diameter—9" deep
Or 8 baskets or reels
7" x 7" and 18" deep
or 20 large skeins dried from hooks.

**EMERSON APPARATUS CO.**
**177 TREMONT ST. • MELROSE 76, MASS.**



# Meeting Specific Needs

• Virtually every organization in the textile industry can profitably utilize our service. It is adaptable not only to all divisions of the trade, but also to the specific needs of the individual business. We will gladly show you just how our service can be used most effectively by your firm. Consult us, without obligation.

**MEINHARD, GREEFF**
**AND COMPANY, INCORPORATED**
**51 MADISON AVENUE • NEW YORK CITY**
*Factoring Founded on Service*


## NEWS OF THE MONTH

Rayon Division of E. I. du Pont de Nemours & Co., Inc. Fiber G is said to be of the same strength when wet as the Army's current rayon tire yarn when dry. The yarn is said to be made in two sizes, 240 den. 120 fil., and 1100 den. 480 fil.

**Army Takes Over Mills.** Seven cotton mills in Fall River, Mass., were taken over on Feb. 7 and will be operated by the War Dept., because of interruption of production due to strikes. Possession is for 60 days, if productive efficiency has then been restored.

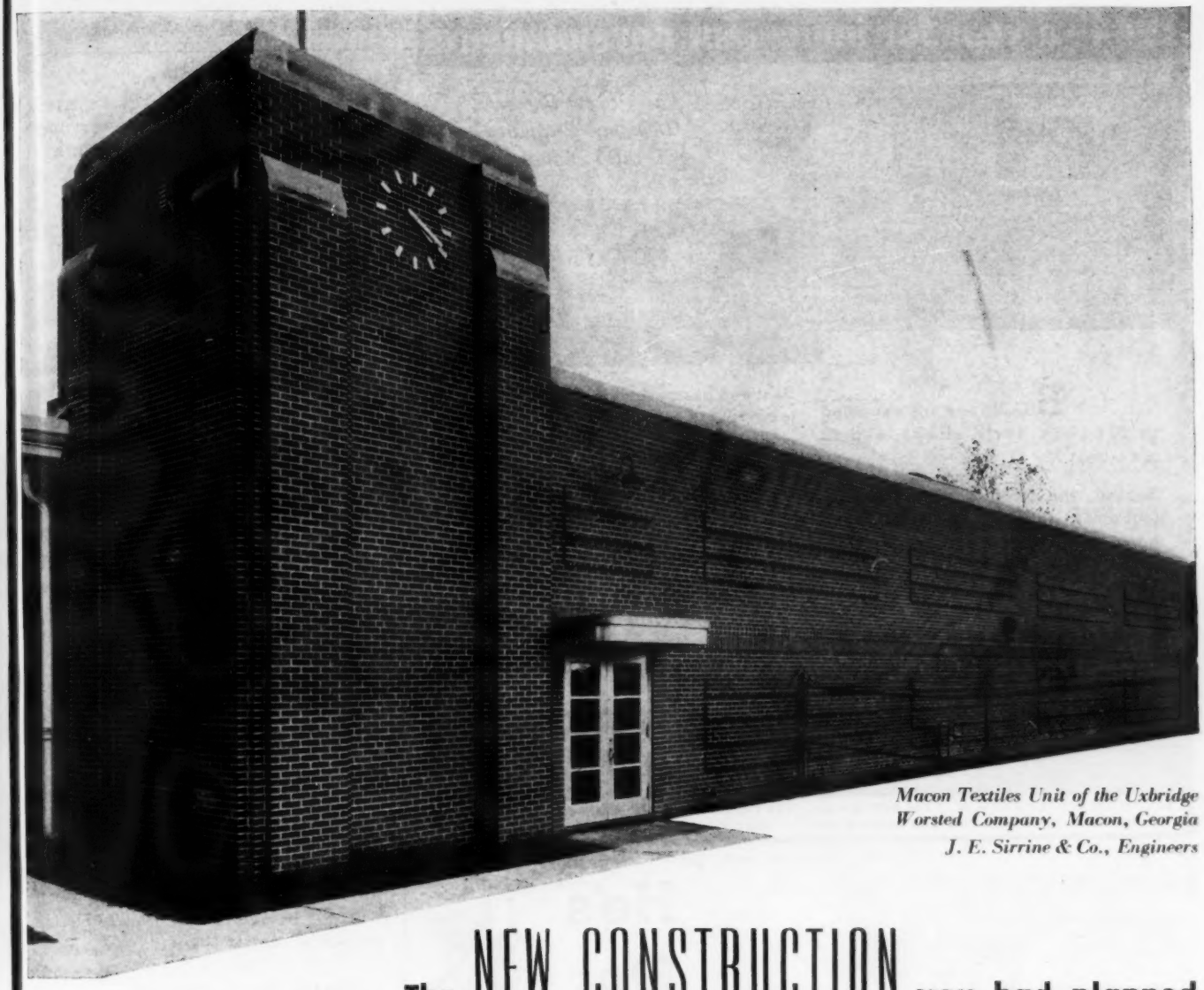
**National Cotton Week.** The annual observance of this promotional event is set for May 22 to 27, 1944. The slogan will be "First in War, First in Peace." Displays will feature military items and postwar civilian applications.

**Inner Soles of Synthetic Yarn.** Procurement is now being made of inner soles utilizing synthetic yarn of the Saran type to be used with the canvas-top, rubber-sole shoe employed by jungle troops. Several layers of fabric are pressed together, making an inner sole that is relatively open and porous.

**New Fine-Denier Viscose Staple.** Development of a 1.0 den. viscose staple rayon of the "Avisco" type has been announced by American Viscose Corp.

**Markets Are Slow.** Cotton goods sluggish as trade still wrestles with details of M317 amendments. . . . Wool goods allotments slow; doubt whether increased yardage available for civilians. . . . Rayon scarce though production facilities are pushed. . . . Hosiery sales well maintained. . . . Underwear shortage likely to continue.

**This and That.** Linwood Lelane Gisclard is the 1944 "Maid of Cotton". . . . Carpet and rug sales for 1943 are estimated at $68,000,000 against $156,000,000 in 1942 and $212,000,000 in 1941. . . . Narrow Textiles Association, 55 West 42nd Street, New York, has been organized; Irving Levy, Century Ribbon Mills, president. . . . World Fashion Center is part of a postwar plan for a New York City building program. . . . An international conference is planned by National Cotton Council. . . . UNRRA plans to salvage military clothing for world relief. . . . A standard sales contract for the rayon converting trade is expected soon. . . . Army has taken over all production of Neoprene yarn. . . . Piedmont Section of AATCC will hold its spring meeting Mar. 25, in Greenville, S. C. . . . Rayon production in U. S. for 1943 is placed at 663,100,000 lb. by *Rayon Organon*, 5% up from 1942, a new high mark.



*Macon Textiles Unit of the Uxbridge Worsted Company, Macon, Georgia*
*J. E. Sirrine & Co., Engineers*

**The NEW CONSTRUCTION you had planned**

**or the MODERNIZATION you had contemplated**

but which the outbreak of war compelled you to postpone, may be possible right now.

The DANIEL files contain copies of Government regulations affecting the building trades. An expert knowledge of what they permit and what they prohibit is essential to the smooth, efficient conduct of our business.

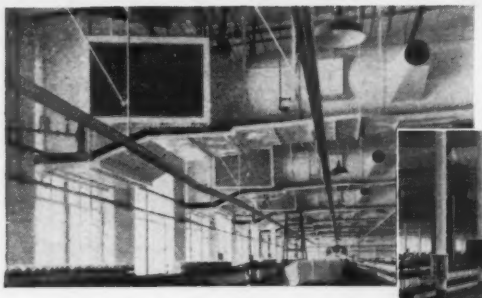
Let's talk the matter over. In all probability, we have worked with your engineer or architect on other projects.

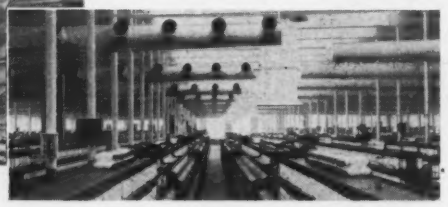
*CONSTRUCTION MAINTENANCE SERVICE . MODERNIZATION*

**DANIEL CONSTRUCTION COMPANY, INC.**

GREENVILLE, S. C. BIRMINGHAM, ALA.

# 1944—a year for important developments





*Two views of Bahnson Humiduct - Precipitron Textile Installation*

BIG things are expected in 1944—in world affairs, and in industry.

Behind the scenes, research and technical development work have gone on, even as demands have grown and accumulated. New and higher standards in industrial air conditioning will, one day soon, become realities.

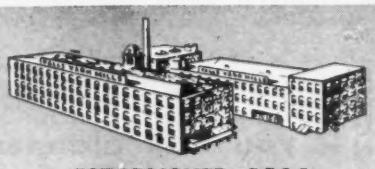
Bahnson has perfected improved systems of air conditioning for worker comfort, and production efficiency . . . as in the new HUMIDUCT system, available with electrostatic air cleaning, heating, cooling, dehumidifying, or in any combination—automatically controlled.

1944 is a good year to make plans for "air superiority" in your plant.

BUY MORE WAR BONDS

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

885 DREWRY ST. ATLANTA, GA. | 53 WORTH ST. NEW YORK CITY | 976 WEST 6TH ST. LOS ANGELES, CAL. | 703 EMBREE CRESCENT WESTFIELD, N. J. | W. J. WESTAWAY CO., LTD. HAMILTON, ONTARIO



ESTABLISHED 1904

Falls

MEANS THE BEST IN

YARNS

MANUFACTURERS OF FINE WOOLEN & SPECIALTY YARNS

Falls Yarn Mills

WOONSOCKET RHODE ISLAND

SELL DIRECT

STANLEY PORTER

NEW YORK

257 4th Ave.

He's Our Boss NOW

Uncle Sam is getting all of our production efforts for the duration of the War.

But our research and development work is still going ahead and you will profit by its results in greatly improved machines for yarn throwing, as soon as peace returns.

U. S. ACME TWISTERS FOR SPOOL OR HEADLESS PACKAGE

U. S. JUMBO FACE DRIVE TWISTERS FOR LARGE HEADLESS PACKAGE WORK

U. S. ACME DOUBLER TWISTERS—LARGE PACKAGE

U. S. REDRAWS AND SPOOLERS

U.S. TEXTILE MACHINE CO.

SCRANTON, PENNSYLVANIA, U. S. A.




(*Continued from page 140*)

that eating schedules will be worked out for each shift, so that everyone in the mill will have an opportunity to obtain a hot meal during a work period.

## Mills Exhibit at County Fair

Greenwood (S. C.) textile mills entered attractive booths at the Greenwood County Fair. The Greenwood-Matthews-Ninety-Six Mills entry had a display of flowers for more than 1,000 men now in the armed forces. The Ware Shoals Mfg. Co. booth featured the cloth it makes as well as garments it completes, while Grendel Cotton Mills pictured processes involved in making rayon and cotton cloth.

## Schoolfield's Most Useful Citizen

Norman J. Waugh, an employe of Riverside & Dan River Cotton Mills, Danville, Va., editor of *Contact*, a monthly journal sent to all former employes of the mills now in the service, has been designated as Schoolfield's most useful citizen for the current year and has been voted the silver cup annually awarded by the Young Men's Club of Danville. Mr. Waugh is also president of the Danville YMCA.

## Safety Instruction at Stowe Mills

In exercises marking the successful completion of a 96-hour course in industrial safety engineering, more than two score supervisors and foremen of the cotton mills of the Stowe Mills, Inc., McAdensville, N. C., were presented certificates and diplomas at a banquet meeting at Charlotte recently. W. J. Pharr, vice-president and treasurer of the company, was master of ceremonies.

## Spindale Mill Gets Out House Organ for Service Men

Spindale Mills' *Echo*, a tabloid size publication to be issued quarterly by employees of the Spindale Mills Co., Spindale, N. C., has made its first appearance. This initial number carries 12 pages. The staff consists of: Mrs. Anna Tallent; reporters, Mrs. Lynch Yelton, Hazel Crawley, Mrs. J. C. Norton, Sue Wilkins, C. S. Moore, D. A. Matthews, Thelma Goode and Ree Gibson. One of the

*Try this*

# CHECK CHART FOR WOOL AND WORSTED OILS

Here are eight points that are important in a good wool or worsted oil. See how the lubricant you are now using rates against the famous Twitchell Wool and Worsted Oils. The result may lead to a very practical idea.

LABORATORY-CONTROLLED THROUGHOUT PRODUCTION — EMERY INDUSTRIES, INC.

| | | PRESENT OIL | TWITCHELL OILS |
|---|---|---|---|
| 1 | Impart necessary lubrication properties. *This improves production.* | YES<br>NO | YES √<br>NO |
| 2 | Have excellent spreading properties. *Promotes uniformity.* | YES<br>NO | YES √<br>NO |
| 3 | Emulsify directly in hot or cold water. *This saves time.* | YES<br>NO | YES √<br>NO |
| 4 | Eliminate corrosion or gumming on carders. *Prevents shut-downs.* | YES<br>NO | YES √<br>NO |
| 5 | Scour easily. *Promotes uniformity in dyeing and finishing operations.* | YES<br>NO | YES √<br>NO |
| 6 | Requires no boiling with alkalies. *Saves materials and steam.* | YES<br>NO | YES √<br>NO |
| 7 | Eliminate rancidity and heating in stored stocks. *Simplifies production schedules.* | YES<br>NO | YES √<br>NO |
| 8 | Excellent for dry finishing of knitting yarns. *Provides lubrication for subsequent operations.* | YES<br>NO | YES √<br>NO |

## EMERY INDUSTRIES, INC.

MAKERS OF STEARIC AND PALMITIC ACIDS, OLEIC ACID, FATTY ACID DERIVATIVES, TWITCHELL PRODUCTS GLYCERINE, PITCH, CANDLES, SANITONE

CINCINNATI, OHIO

*Established 1840*

New England Office
187 Perry Street
Lowell, Mass.

Canadian Representative
Canada Colors & Chemicals, Ltd.
Toronto, Ont., Canada

New York Office
1336 Woolworth Bldg.
New York, N. Y.

BUY WAR SAVINGS STAMPS AND BONDS EVERY PAYDAY

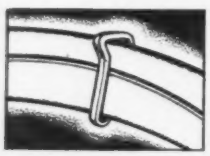
VICTORY SERVICE ENGINEERING
on the JOB

## Choice of Right Impression Triples Traveler Life—Checks Auto-Lubricated Ring Wear

When production was slowed by travelers heating up, wearing rapidly, and flying off auto-lubricated rings, an eastern worsted mill asked Victor Service Engineers for assistance in spotting the trouble. It was found that the traveler used was glazing the wick and running dry, because the impression of the traveler rode on the wick groove.

A simple change to a Victor traveler with a higher impression restored the advantages of the lubricating feature, tripled traveler life, and checked the "ripple" wear that soon develops on the inside of the rings when the oil is not properly distributed.

***What Traveler is Right for your Rings?***



**HELICAL GROOVE RINGS**
Impression should be above the highest point of the groove.

**2—AND 4—SPOT RINGS**
Impression should be below the openings for the wick.

A folder describing how to select travelers with the right impression for all types of auto-lubricated rings will be sent on request. Talk over your traveler troubles with a Victor Service Engineer, and let his proved "know-how" help you save time, improve yarn quality. Write, wire, orphone.

**VICTOR RING TRAVELER COMPANY**
20 Mathewson Street Providence, R. I.
P. O. Box 1318

ATLANTA, GA.
1021 Virginia Ave., N. E.
Tel. Vernon 1898-2330

GASTONIA, N. C.
173 W. Franklin Ave.
Tel. 247

VICTOR
*Ring Travelers*



chief purposes of the paper is to give those in service from the plant an idea of what is going on back home.

## Winners in Hosiery Safety Contest

Announcement by the North Carolina Industrial Commission of the winners of the second annual statewide hosiery safety contest, sponsored jointly by the Southern Hosiery Manufacturers' Association and the industrial commission, list the winners in the four groups as follows: Foster Hosiery Mills, Burlington; Larkwood Silk Hosiery Mills, Inc., Charlotte; plant No. 1 of the Adams-Millis Corp., High Point, and Wilkes Hosiery Mills, North Wilkesboro.

While the average frequency of accidents increased from 6.25 in 1942 to 7.55 in 1943, this is attributable to increased employment and increased tempo at which the mills are working at this time.

One hundred and thirteen North Carolina mills participated in the contest this year, as compared with 75 in 1942.

## 25-Year Club of York Knitting Mills

Eight employees of the Harvey Div., seven of Hosiers Div., and two Woodstock, Ont., natives, now in the head office in Toronto, were recently honored by York Knitting Mills on having completed 25 years or more of service. The first annual dinner of the Quarter Century Club was held in the Royal York Hotel and each of the members was given a handsome watch.

*American Red Cross starts its 1944 War Fund drive on March 1. The goal is $200,000,000 to be subscribed from coast-to-coast.*

**Reduce Spoilage with G-E**
***Watch Dog***
REG. U.S. PAT. OFF.
**STARTERS**

Is spoilage in your plant becoming a problem? Then check the condition of your lighting system. Blinking and flickering of dying fluorescent lamps irritate war workers, impair the quality of their workmanship and retard production. Today that's serious! Why tolerate such undesirable lighting conditions? You can banish annoying blink immediately and permanently by switching to the G-E Watch Dog Fluorescent Starters. *Here's what happens:*

When a lamp reaches the end of its useful life, blinking and flickering commence but the Watch Dog stops 'em cold! This manual reset starter cuts itself out of the circuit immediately by eliminating all flow of current.

This catalog will tell you how to use fluorescent accessories for best lighting results. You can obtain your copy by writing to Section G241-109, Appliance and Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

# *The Need for Speed was never greater*

# *SCOTT TESTERS

## protect and promote production!

When production pressure is extra great, every step needs the extra protection that an Adequate Testing Routine affords. The 60 models of *Scott Testers offer you "world - standard" equipment for checking tensile, hysteresis, crepeage, twist, flexing, burst, adhesion, etc., etc. Models are of many types, with capacities from single hair to 1 ton. And to make your testing equipment of maximum usefulness, there is "Scott Service", a truly interested and helpful co-operation in the solving of war plant testing problems.

*Standard of* **SCOTT TESTERS** *the World*

*Registered Trademark

## HENRY L. SCOTT CO.

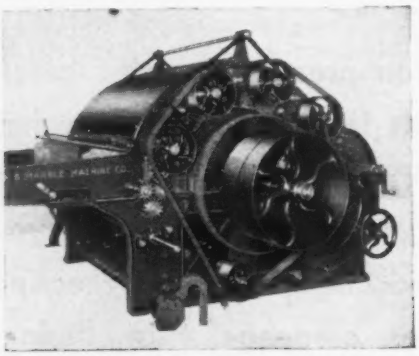
**95 Blackstone St.** **Providence, R. I.**

**Manufacturers of more than 60 models of testing machines for every phase of textile, rubber, wire, leather, paper and similar tests including Tensile, Hysteresis, Flexing, Compression-cutting, Plasticity, State-of-Cure, Adhesion, Burst, etc.**

# Bring Your Picker Room *up to date*

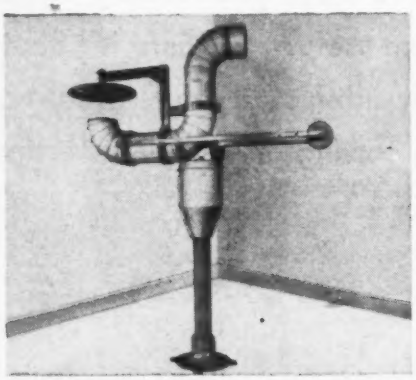
**ATLAS No. 2 PICKER FEEDER**

The use of this Feeder insures a more uniform and continuous feeding of the stock at the desired rate.



**FEARNAUGHT MIXING PICKER**

Operates on the same general principle as in coarse carding. Made with either metal or wood covered main cylinder, workers and strippers.



**TRUSLOW BLENDER (patented)**

Assures a superior mixture of different colors, kinds and qualities of stock. Used with wool, cotton, asbestos and synthetic fibres.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS, U. S. A.


## FREE FOR THE ASKING

(*Continued from page 144*)

the joints, brazing with a torch and the separating of joints are covered in great detail in this article. A table is given describing the physical properties of alloys for silver brazing.

**9. Development of humidification** is covered in the December issue of *Parks' Parables*, published by Parks-Cramer Co. Central station humidifying is mentioned and also use of turbomatics in the worsted industry covered.

**10. "Correct Lubrication for Steam Turbines,"** is the title of an article appearing in the Fourth Edition of *The Service Factor*, published by Sinclair Refining Co. Included in this article is a table setting forth the various types of lubricants and viscosity ranges to use with forced feed lubrication and with ring lubrication. An endurance test for turbine oils is also described.

**11. Results of a labeling survey** made by Forstmann Woolen Co. is discussed in an article appearing in the November-December issue of *The Power Specialist*, published by Johns-Manville. Results of the survey indicate that 92% of the buyers stated that labeling does help sell fabrics, whereas 96% of the sales people made the same statement.

**12. Steel strapping** for protecting war shipments is covered in Issue No. 14 of *Acme Process News*, published by Acme Steel Co. Unusual applications of strapping are covered such as the making of bayonet practice dummies from willow branches which are then wrapped in old burlap and strapped.

**13. "Production Management,"** is the title of a 30-page booklet issued by The Bedaux Co., Inc. This booklet points out the widespread use of sound production management methods in industry today and devotes sections to work measurement and production control, method improvement, labor cost and expense control, supervision and indirect labor, planning and scheduling, job evaluation, incentive wage plans and other phases of plant operation.

**14. Three-point pipe gage** with which instant and accurate readings may be taken of pipe diameters and drill size to tap, is described in a leaflet being offered by the Three-Point Gage Co.


RICHMOND QUALITY PRODUCTS

# SOLSTOCK

THE
*Economical*
WOOL
SPINNING OIL

- Easily emulsified—
- Requires only water—
- Scours out easily—
- Inhibits corrosion—
- Ideal for garnetting
- Has solvent action which keeps cards, rub-aprons and spinning rolls clean—
- Combines readily with natural oils and greases—

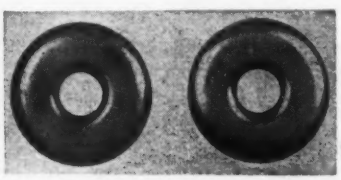
We invite you to try "SOLSTOCK". Ask for free sample—ENOUGH FOR A TRIAL RUN—and see the difference.

*Our Technical Department is at your service.*

PRICED RIGHT

**RICHMOND**
OIL, SOAP & CHEMICAL CO., Inc.
153-55 Richmond Street
PHILADELPHIA 25, PA.

# Higher Tension Efficiency with WAYNE TENSION DISCS



**Wayne tension discs provide uniform tension with a minimum of wear. Higher production efficiency is assured. Constructed of hardened chrome plate steel. Write today for complete details and the savings offered by Wayne discs.**

**Wayne Manufacturing Co.**
**Honesdale, Pa.**
*Manufacturers of Textile Mill Supplies*

# IN SERVICE— Cotton DRESS GOODS

**Muslins – Lawns – Dimities**

*White – Dyed – Printed*

The unique beauty and highly desirable qualities of fine cotton fabrics are accentuated and made permanent by the Saylerized Finish.

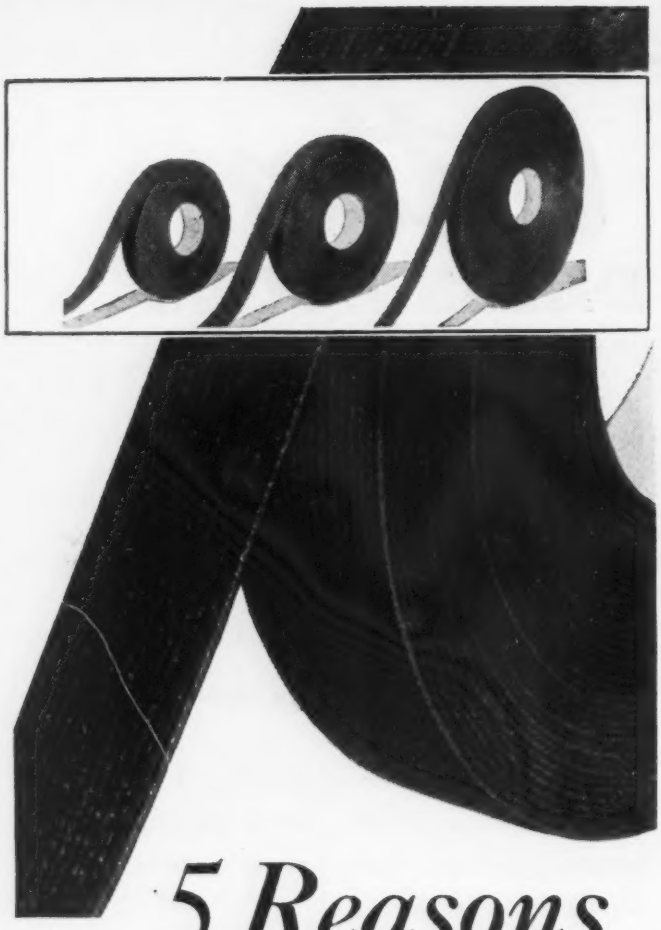
SAYLERIZED fabrics are starchless — will not lint, fuzz or become limp and lifeless.

SAYLERIZED fabrics resist soiling — which means that the wear and tear of excessive laundering is eliminated.

**Sayles FINISHING PLANTS, INC.**
**SAYLESVILLE, R. I.**

Established 1847

NEW YORK OFFICE: 72 LEONARD STREET, NEW YORK CITY



# 5 Reasons

## WHY YOU'LL DO A BETTER JOB OF CARD GRINDING WITH *ALOXITE* CARD GRINDING FILLET . . . *it's grooved*

*1.* It's coated with the hard sharp grains of *Aloxite*, the manufactured aluminum oxide abrasive.

*2.* Cuts faster and cleaner.

*3.* It is uniformly flexible—retains its flexibility and is easy to apply.

*4.* It's longer wearing because of the durability of the abrasive grain, the extra heavy, non-stretching, cloth backing—and the strength of the special glue bond prevents grain shedding.

*5.* And *Aloxite* Card Grinding Fillet has a grooved coating or grinding surface assuring a faster cutting action and a proper point on the wires.

Made in America—and it is always available from your supply house or The Carborundum Company, Niagara Falls, N. Y., Manufacturers of *Texalox* the improved take-up roll covering.

**Fillet Cloth by CARBORUNDUM** TRADE-MARK

(Carborundum, Aloxite and Texalox are registered trade-marks of and indicate manufacture by The Carborundum Company)

# NEWS ABOUT Suppliers

**Warwick Chemical Co.,** West Warwick, R. I., has elected Walter E. Murray as a vice president. Mr. Murray joined Warwick two years ago as sales manager of the textile chemical department. He had a 12-year experience in textile finishing earlier in his career.

**Rohm & Haas Co.,** Philadelphia, through its president Otto Haas, has announced a pension plan for employees involving a monthly retirement income for life, which, in conjunction with Social Security benefits, approximately equals 40% of the employee's pay, plus increased life insurance during active years. This will be available for both hourly workers and salaried employees. The entire cost of the plan, which became effective Dec. 31, will be underwritten by the company. The plan applies to employees with five or more years service with Rohm & Haas Co., and its affiliates, Charles Lennig & Co. and Resinous Products & Chemical Co.

**Universal Winding Co.,** Providence, R. I.—P. D. Howe, president of this company, has announced that because of contract cancellation, the company's department manufacturing parts for carbines under a sub-contract with the Underwood Elliott Fisher Co., Hartford, Conn., has been closed. About 250 employees have been laid off. Mr. Howe said that the company is working on several other important war contracts, and that an increasing demand for its peacetime products, winding machines, is apparent.

**American Resinous Chemicals Corp.,** Peabody Mass., has appointed Burt Wetherbee as manager of technical service. He has been associated with Globe Woven Belting Co., Buffalo, since 1936 as manager of research.

**Melrose** (Mass) **Chemical Co.,** established by Harold Bennett 30 years ago and managed by him until his death recently, has been purchased by James Warr who has been on the selling staff for the last 10 years, although lately with the textile division of the War Dept. in Washington. The business will be continued as in the past.

*WALLACE TAYLOR, who is now general manager of the Marshall & Williams Mfg. Co., Providence, R. I., and assistant to the treasurer, J. H. Williams. Mr. Taylor has resigned as sales manager of Textile Finishing Machinery Co. with which he has been connected for 24 years.*

**Calco Chemical Division,** American Cyanamid Co., Bound Brook, N. J.—William H. Peacock, a member of Calco's technical service staff, is conducting a course in the Evening Textile High School, 351 West 18th St., New York, on the subject of color matching, color terminology, judging color effects, Munsell, Ostwald and other color standards and measurement of color. The course is given without charge to those who desire to receive this instruction.

**Pennsylvania Salt Mfg. Co.,** Philadelphia, Pa., has appointed Donald W. Graham as district sales manager in charge of the St. Louis office to succeed Michael B. Dwyer who has retired after 58 years of active duty with the company. Mr. Graham, who has been with the company for 13 years, comes from the Chicago office. North Emory Bartlett has retired as company vice president, after 50 years of service. The company has divided the New York territory as follows: F. G. Rodenburgh will cover New York City, Long Island, Westchester and Put-

# WARNING

## . . . against Complacency

THERE seems to be a growing feeling that there is nothing to worry about. Conversion is behind us. Victory is ahead of us. The cotton-textile war machine is running smooth as a clock.

Let anyone who feels this way answer a few questions. What about the demand far above the capacity to produce? What about the over-worked machinery? The deficiency of skilled employees? The excessive breakage? The shortage of vital supplies?

That is the situation. It means further disruption of civilian business and relinquishment of competitive advantages. It calls for the utmost in cooperation regardless of re-conversion costs, as far ahead as we can see.

CONE EXPORT & COMMISSION COMPANY

59 WORTH STREET NEW YORK, N. Y.

★ ★ ★ BUY U. S. WAR BONDS ★ ★ ★

# DUMB DORA MAY BURN DOWN YOUR PLANT!

## Unless you protect oily floors with SPEEDI-DRI

**Rules or no rules, some Dumb Doras *will* sneak smokes and drop matches or butts on the floor where highly inflammable oil-soaked wool, cotton, or rayon waste makes your fire hazard doubly dangerous. You can foil these "unconscious saboteurs" by spreading SPEEDI-DRI, the famous oil- and grease-absorbent, on the floors of your carding, picking, spinning, or weaving rooms, and around the base of mules, looms, and machine legs. It works fast. It's economical. It retards fire, even when oil soaked (just ask your insurance company about that!). What's more, it sets up an immediate non-skid surface preventing many a falling and slipping accident. SPEEDI-DRI will brighten your plant, improve morale, speed production, and save vital manpower by freeing porter labor for more important jobs. It separates easily from waste. Write for literature and FREE SAMPLE.**

*SUPPLIERS: East*—Refiners Lubricating Co., New York 1, New York.
*Midwest & South*—Waverly Petroleum Products Co., Philadelphia 6, Pa.
*West*—Waverly Petroleum Products Co., Russ Bldg., San Francisco 4, Calif.

**SPEEDI-DRI**
OIL AND GREASE ABSORBENT




nam Counties in New York, and Fairfield, New Haven and Middlesex Counties in Connecticut. Charles A. McCloskey will cover Northern New Jersey as heretofore, and in addition will cover Connecticut and the eastern half of New York State with the exception of the counties in those States covered by Mr. Rodenburgh. L. H. Brandt, formerly with the National Ammonia Division of the DuPont Company, has joined the Technical Service Department of Pennsylvania Salt.

**Diamond Alkali Co.**, Pittsburgh, Pa., has appointed Raymond Diaz, formerly treasurer of Benner Chemical Co., Chicago, to be supervisor of Diamond Alkali district offices.

**E. I. duPont de Nemours & Co.**, Wilmington, Del., have announced the retirement of Francis J. Byrne, assistant director of the public relations department. He has been associated with the company for 27 years, and has reached the retirement age of 65. He joined the Du Pont company in 1916, at the time the publicity bureau was established, which was later expanded into the public relations department.

**Devoe & Raynolds Co.**, New York, has appointed A. H. Mohrhusen as general merchandising manager of Devoe &

*J. W. IVEY, of Charlotte, for the last 15 years with Mathieson Alkali Works, who has resigned his position with that company to become manager of the heavy Chemicals Division of Moreland Chemical Co., Spartanburg, S. C. The latter company, of which Paul C. Thomas is president, manufactures sizings, soaps and finishing products, and is distributor of a complete line of textile and industrial chemicals. Mr. Ivey is secretary and treasurer of the Carolina-Piedmont Section of the American Chemical Society. He was with Dixie Mercerizing Co. early in his career.*

*FRED A CONKLE, who is now manager of the Distributor Sales Department of Wyandotte Chemicals Corp.—both J. B. Ford and Michigan Alkali Divisions. Since 1940 Mr. Conklin has been sales manager and then general manager of William Lynn Chemical Co., Indianapolis, Ind. This company is a distributor for products of Wyandotte Chemicals Corp.*

Raynolds and the associated trade sales companies. This newly-created post entails direction of a coalition of departments, including sales promotion, advertising, merchandising, and sales research and training. George P. Gray has been promoted to general manager of the Brush Division of the company.

**American Viscose Corp.**, New York, is offering a retirement plan for its employees, which has been approved by the Commissioner of Internal Revenue and became effective Dec. 26. All employees between the age of 25 and 65, who have completed two years of service, are eligible to become members of the plan. The plan is intended to supplement old-age benefits under the Federal Social Security Act, and provides for a retirement income for employees who reach the age of 65 years. If an employee wishes, he may retire before reaching the age of 65, but the income payments are lower if he retires at an earlier age.

**Dayton** (Ohio) **Rubber Mfg. Co.**, a pioneer in rubber and synthetic rubber development, has appointed T. C. Davis, formerly manager of industrial sales, as vice-president in charge of mechanical sales planning and experimental sales. T. D. Slingman, New York district manager, has been made vice-president in charge of mechanical sales.

**General Printing Ink Corp.**, New York, has appointed

# CAP SPINNING!

Gabrielle LaCroix, shown here inspecting the yarn on one of our cap spinning frames, is helping to hasten the day of a different kind of cap-spinning—when you and we and she and our boys all over the world will throw our caps into the air and shout our exultation!

Miss LaCroix's work is particularly important at this time. In the press to produce millions of yards of fabric for our armed forces, and other millions of yards for civilian use, we must not fail to maintain our high standards of quality. Gabrielle LaCroix and her associate workers may be depended upon to see that we do *not* fail!

*The same high quality you have always known is still part and parcel of Pacific fabrics*

**PACIFIC MILLS**

140 Federal Street, Boston • 214 Church Street, New York • Worsted Division, 261 Fifth Avenue, New York
Mills at Lyman, S. C., Columbia, S. C., Lawrence, Mass.

NO PLACE FOR A "FLAT"

A tire that can take it . . . one that minimizes tire failure, no matter what the going, is a "must" for an army that moves on rubber. Tires with high tenacity rayon carcasses are that kind of tire. That's why they are standard on all army vehicles and planes.

To insure smooth production in the manufacture of these tires Allen High Speed Rayon Warper beams carry High Tenacity Rayon from producer to manufacturer in perfect packages.

THIS MONTH BUY ANOTHER WAR BOND

ALLEN COMPANY

130-156 River Rd., New Bedford, Massachusetts

So. Rep. Mr. L. E. Wooten, Fort Mill, S. C.

*Manufacturers of Warper Beams for*

HIGH TENACITY RAYON, NYLON, ACETATE AND RAYON



Charles R. Sherman, formerly director of purchasing for the corporation, to the general managership of its General Industrial Finishes Division. F. W. Clayton succeeds him as purchasing agent.

**West Coast Knitting Machinery & Supply Co.** is the firm name under which Louis Reisler and William Young have published an intention to conduct business at 2224 South Main St., Los Angeles, Calif.

**General Electric Co.**, Schenectady, N. Y., reports that orders received during the year 1943 amounted to $1,360,643,000, compared with $2,003,039,000 for 1942, a decrease of 32%. Cancellations of orders during the last year totaled more than $450,000,000. Unfilled orders on hand and assured business pending at the close of the year 1943 was equivalent to approximately a year's output at current production rates and prices.

**Link-Belt Co.**, Chicago, has elected two vice-presidents as follows: E. L. Berry, vice-president and general manager of Link-Belt Ordnance Co., has been elected vice-president of Link-Belt Co., the parent organization. Richard F. Bergmann, company chief engineer, has been elected a vice-president of Link-Belt Co., with headquarters at Chicago, as heretofore.

**Westinghouse Electric & Mfg. Co.**, East Pittsburgh, Pa., has appointed William J. Massey as general lamp sales manager of the Westinghouse Lamp Division with headquarters at Bloomfield, N. J., where he will have charge of all lamp sales activities including district sales offices; the illuminating engineering, commercial engineering and advertising departments. Mr. Massey has been associated with the commercial activities of the lamp division since 1907.

**Allis-Chalmers Mfg. Co.**, Milwaukee, Wis., has elected James Dalton Cunningham, Chicago, Ill., to the board of directors to succeed Charles W. Cox, New York, a director since 1913, who resigned because of ill health. Mr. Cunningham is president of the Republic Flow Meters Co. of Autogas Co., and of Smoot Engineering Co.

**Atlas Powder Co.**, Wilmington, Del., has appointed Dr. R. Max Goepp, Jr. as director of organic research, responsible for the pioneering research on organic chemical products. Dr. Goepp joined Atlas in 1932 as a research chemist. His work has been mainly in the field of carbohydrate chemistry.

***JAMES H. JEWELL, newly appointed assistant manager of the Industry Department of Westinghouse Electric & Mfg. Co. Mr. Jewell has been manager of the company's Agency and Specialties Department since 1940, and will continue to head that division.***

**Joshua Hendy Iron Works**, Crocker-Wheeler Electric Division, Ampere, N. J., has appointed R. D. Ulrey as manage of its new Los Angeles, Calif., office at 523 West Sixth St., Los Angeles. Mr. Ulrey has had experience in that area as a motor and generator application specialist.

**Chemical Research for Industry, Inc.**, Cleveland, Ohio, has appointed James W. Yanda as general manager in charge of research chemical development engineering.

**Laminated Section of NEMA** have organized and is financing a test program to record properties of laminated materials and to standardize specifications and determine "best use" applications with a research-test center at Johns Hopkins University, Baltimore, as a wartime development which is conceivably projected for possible permanent establishment. The membership of the sponsoring group consists of the following: Continental - Diamond Fibre Co.; the Formica Insulation Co., General Electric Co., Mica Insulator Co., National Vulcanized Fibre Co., Panelyte Corp.; the Richardson Co., the Spaulding Fibre Co.; Synthane Corp., Taylor Fibre Co. and Westinghouse Electric & Mfg. Co.

**Wickwire Spencer Steel Co.**, New York, has elected Samuel

# ON VICTORY'S HORIZON...

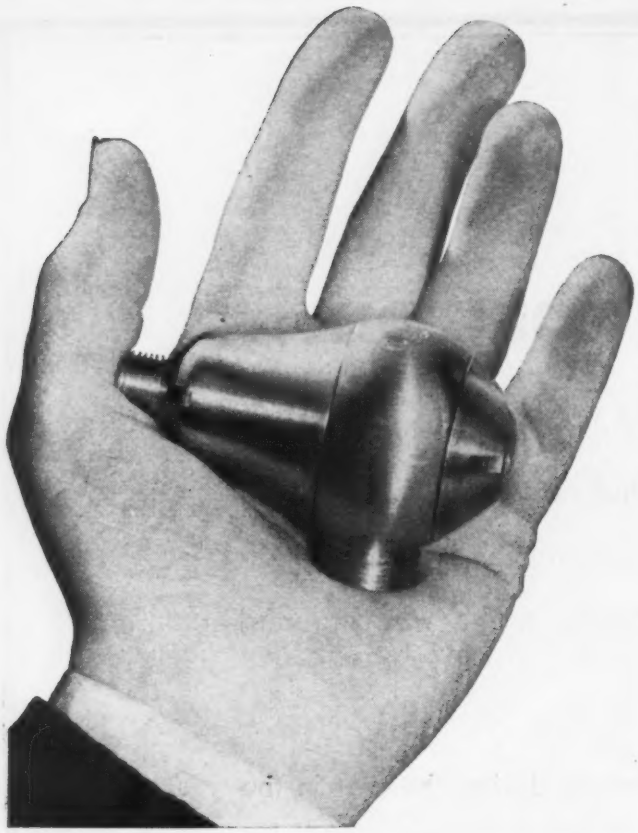
Beyond the horizon of Victory lies Peace — and reconstruction. The important part that the textile industry will play in the world's post-war reconstruction is already indicated by the recent developments in the weaving and finishing of cotton goods.

The advances that have been made during the war in the more efficient production of better fabrics make it possible for American manufacturers and converters to supply fabrics for a much broader range of end-uses than cotton textiles have supplied in the past.

**SOUTHEASTERN COTTONS INC.**

**58 WORTH STREET, NEW YORK 13, N. Y.**

*Branch Offices:* **Atlanta · Baltimore · Boston · Chicago · Dallas · Philadelphia San Francisco · St. Louis**



# The Reliable Atomizer

Looks like a sweet potato partly for streamlining, so as not to catch lint; partly to make it *diaphragmatic.*

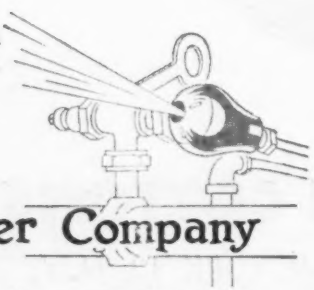
After hard and continuous mill service, orifices in the self cleaning

## Parks Turbomatic Humidifier

still remain normal in size, shape, and alignment—also in action.

Rated conservatively. No double standards; one for our laboratory—one for your mill.

Interchangeable with earlier Turbo models.



**Parks-Cramer Company**

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.



D. Lunt as a member of the board of directors replacing Charles G. Terry. Mr. Lunt is the managing partner of Hamlin & Lunt, of Buffalo.

**Vibration Engineering Co.,** New York, N. Y., has taken over the business formerly conducted by B. T. Butterworth Jr. Mr. Butterworth heads the company as president, Harry Hayden is secretary and treasurer. The company will greatly expand its activities in the industrial field on the matter of vibration control.

**Sheldon, Morse, Hutchins & Easton, Inc.,** New York, N. Y., have appointed William Roy Ford as assistant to L. W. Hutchins, president of that firm and director of the Safety Research Institute. Mr. Ford, a fire protection engineer, has resigned from the U. S. Office of Civilian Defense, where he has been assistant chief of Fire Defense Education Unit.

**Young Radiator Co.,** Racine, Wis., has appointed the W. P. Nevins Co. as sales and engineering representatives in the Chicago territory (including Lake and Cook counties in Illinois and Lake and Porter counties in Indiana).

**Plastics Materials Manufacturers Association,** Washington, D. C., has reelected James L. Rodgers of the Plaskon Co. as president, and plans expansion of its technical activities with the appointment of F. H. Carman as general manager.

**General Dyestuff Corp.,** New York, has added Donald M. Martin to its staff with headquarters in New York. He will be in charge of sales of auxiliaries. The Auxiliary Department has formulated plans covering the development of textile finishes to meet postwar requirements. Mr. Martin was formerly president of the Aqua Sec Corp.

**Joseph T. Ryerson & Son, Inc.,** have purchased from the Bethlehem Steel Co. their Pittsburgh steel warehouse plant. The property consists of a large modern warehouse building, containing 150,000 sq. ft. on an industrial site of several acres, located in Carnegie, adjacent to Pittsburgh. Ryerson has opened a sales office in the Grant Building, 330 Grant St., Pittsburgh.

**Wyandotte Chemical Corp.** (Michigan Alkali Division), Wyandotte, Mich., has appointed G. T. Robinson as manager of its Cincinnati office. He replaces C. D. Morris, former manager, who recently left the company to serve the U. S. Merchant Marine. Mr. Robinson joined the company in 1927, and for several years has been central regional supervisor for the J. B. Ford Division, with headquarters in Cleveland.

*THOMAS C. MORRIS, who has recently joined the technical staff of the Hart Products Corp., New York, manufacturers of chemicals for textile processing. He was for four years with the DuPont company, where he did considerable work in the sulfonation of oils, fats and alcohols. For the last three years he has been production supervisor in the Chemical Warfare Service at Edgewood Arsenal, Md.*

**Morris Speizman Co.,** Charlotte, N. C., is the new name under which the business formerly conducted as Morris Speizman, individually, now operates. There is no change in ownership or policies of the organization.

**Westinghouse Electric & Mfg. Co.,** Switchgear and Control Division of the East Pittsburgh Works, has named Herbert L. Rawlins as manager of the Protective Devices Engineering Department, replacing L. R. Ludwig, whose appointment as manager of the Motor Division was recently announced. A. W. Hill, design engineer, becomes manager of Power Circuit Breaker Engineering, also part of Mr. Ludwig's former responsibility.

**S. K. F. Industries, Inc.,** Philadelphia, have appointed Walter C. Ahlers to the position of Detroit district manager to succeed Robert H. Hirsch, resigned. Mr. Ahlers has held the position of assistant district manager of the Detroit office for a number of years.

# PINS and LAGS

COTTON PICKER LAG — FLAT PINS
RAG OR SHODDY PICKER LAG
STEEL-FACED RAG OR SHODDY PICKER LAG
WASTE MACHINE MAIN CYLINDER
CARDING BEATER LAG

## WE OFFER
## QUALITY . . . *and* . . . UNIFORMITY

**PINS** A completely new HARDENING and TEMPERING Department insures lasting quality and uniformity in the pins. We manufacture in any type, size or quantity.

**LAGS** Kiln dried Rock Maple with every shipment tested to insure long life and no splitting. Lags of every type for every purpose are available.

**SERVICE** To make immediate shipments, we carry in stock many items. Write us for quotations.

**OUR PRODUCTS ARE GUARANTEED**

JUTE and FLAX CARDS PINS
COTTON WASTE PICKER PINS
RAG or SHODDY PICKER TEETH
MIXING PICKER TEETH and PINS
WASTE MACHINE PINS
DOFFER TEETH
CORDAGE PINS
TENTER PINS
FALLER BAR PINS
JENNY BAR PINS
GILL PINS
HACKLE PINS
COMB PINS

FALLER BARS—PLAIN or PINNED
HACKLES FOR MACHINE or HAND
GILLS PINNED
TENTER PLATES PINNED
WET and DRY COMBS
FOR THE BRUSH TRADE
LAGS—GILLS—TENTER PLATES
ROLLS—FALLER BARS
IRON RIVETS
PLAIN or STEEL CLAD LAGS FOR USE IN—
JUTE and FLAX CARDS
COTTON WASTE PICKERS

CARDING BEATERS
RAG or SHODDY PICKERS
WORKER ROLLERS—WOOD or STEEL
STRIPPER ROLLERS—WOOD or STEEL
LUMPERS
WIPING WASTE MACHINES
PINNED FEEDER SLATS
PLAIN SLATS
DOFFER PLATES
WASTE MACHINE—
DOFFER CYLINDERS—STEEL
PINNED FEED ROLLERS
FEED ROLL LUGS

**WILLIAM CRABB & CO.** **301-3rd Ave., Newark, N. J.**

# 5 MUSTS FOR A PERFECT DESIZER!

**1.** ***MUST*** be absolutely safe, even for the sheerest fabrics.

**EXSIZE** is a concentration of natural enzymes—contains no harsh alkalis or chemicals—its gentle, thorough action cannot weaken cloth.

**2.** ***MUST*** work evenly and rapidly.

**EXSIZE** desizes starch and starch derivative sized fibres with speed and efficiency, leaving materials soft, elastic and supple.

**3.** ***MUST*** be simple to prepare and use.

**EXSIZE** can be used by anyone successfully; easy to use; no elaborate preparation required.

**4.** ***MUST*** produce uniform results.

**EXSIZE** never does a spotty job—it turns out the same clean absorbent fabrics every day.

**5.** ***MUST*** be economical.

**EXSIZE** costs less than most desizing agents. It gives maximum satisfaction at minimum expense. A few cents worth will desize hundreds of yards of cotton or mixed cotton cloth.

**Use our laboratories for your tests—there's no obligation. Or, if you prefer, a trained Pabst field man will gladly work with you in your own mill. Write for our free booklet.**

Copr. 1944, Pabst Brewing Company, Milwaukee, Wisc.

**PABST SALES COMPANY**

**CHICAGO, ILLINOIS**

**Warehouses at New York, and Textile Warehouse Company, Greenville, S. C.**


# NEWS ABOUT *Men*

**Frank E. Richmond** has been made chairman of the board of Crompton (R. I.) Co. **Lawrence Richmond** has been elected vice-chairman and treasurer. **John L. Redmond** has become president of the company. **Frank Richmond** has been active head of the enterprise since 1907, as treasurer and later president.

**Copeland M. Draper** has been elected president of Draper Bros., Canton, Mass. He succeeds the late Robert L. Draper. Mr. Copeland joined Draper Bros. in 1925. He is largely responsible for the knitted coating end which was started in 1927.

**K. M. Harris** has been elected president of Morehead Cotton Mills, Spray, N. C.

**Robert S. Dempsey** has resigned as chief of the Textile, Clothing and Shoe Machinery Branch of WPB. Deputy in charge until a successor is appointed is **L. Marshall Newell**, from the Draper Corp.

**Arthur D. Whiteside** has resigned as chairman of the OCR to return to Dun & Bradstreet.

**Ralph Cooper**, president of Coopers, Inc., Kenosha, Wis., has succeeded **J. F. Nields, Jr.**, as head of underwear division, Knit Goods Branch, WPB.

**Norman F. Dalrymple** was elected president of Memphis (Tenn.) Cotton Exchange on Jan. 12. **T. F. Jackson** was named first vice president; other vice presidents, **C. R. Cash** and **J. T. Murff**; treasurer, **Arthur H. Bower**; Directors, **C. L. Andrews** and **George S. Peyton** for two years, **I. H. Barnwell Jr.**, **Albert S. Kyle** and **E. P. Newbern** for one year.

**Robert Lassiter**, chairman of the board of Mooresville (N. C.) Cotton Mills, has been reappointed a director of the Federal Reserve Bank of Richmond, Va., for a term of four years. At the same time, he was renamed chairman of the board and Federal Reserve agent for the current year. **George M. Wright**, president of Republic Cotton Mills, Great Falls, S. C., was also reappointed a director of the Richmond Federal Reserve Bank for a term of three years.

***DONALD J. BRIGHTMAN, now general sales manager of the textile division, United States Rubber Co., as reported in these columns last month.*** *Pach Bros.*

V. D. Guire, a director of the Lenoir and Steele Cotton Mills, Lenoir, N. C., has been elected president of the Union National Bank of that city. He succeeds the late F. H. Coffey.

**Richard C. Coker**, vice president of Carolina Fibre Co. and consulting engineer for the Sonoco Products Co., both of Hartsville, S. C., has been named by Governor Olin D. Johnston as a member of the South Carolina Forestry Commission.

**Archie A. Drake** is now vice president of Bibb Mfg. Co., Macon, Ga. He recently completed 35 years service with the company.

**William D. Gardner**, vice president and sales manager of Alexander Smith & Sons Carpet Co., Yonkers, N. Y., was recently tendered a dinner to mark his 50 years in the floor covering business. Representatives of eight other firms with which Mr. Gardner has at some time served were also present. These firms are John H. Pray & Co., Bigelow-Sanford Carpet Co., W. & J. Sloane, C. H. Masland & Sons, Mohawk Carpet Mills, Sloane-Blabon Corp., Toronto Carpet Mfg. Co., M. J. Whittall associates.

**Frank H. Deknatel**, first vice president and treasurer of the

# Smart! Why?

Because it was skillfully designed—executed with the finest of craftsmanship? Yes . . . but that's only part of the story! Unless the material from which this ski suit was made had been properly processed, the suit never would have had the style appeal that sold it. That's why so many leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

There is a C.P.P. soap or synthetic detergent for every fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for detailed information on the full line of C.P.P. processing agents made specially for the textile industry. Or, write to Industrial Department at Jersey City 2, N. J.

**COLGATE-PALMOLIVE-PEET CO.**

Jersey City, New Jersey — Kansas City, Kansas
Jeffersonville, Indiana — Berkeley, California

★ ★ ★

COLGATE KWIKSOLV — COLGATE FORMULA 25

BADGER FLAKES

COLGATE WHITE SOAP FLAKES — ARCTIC CRYSTAL FLAKES

**DON'T WASTE SOAP . . .** vital materials needed to win the war are used in making soaps.

# SINGEING • DRYING • CURING

*Patents Applied For*

## *by Infra-Red Radiant Heat*

Radiant Infra-Red Heat is now applied efficiently to the three operations of:

**(1) Singeing (2) Curing (3) Drying**

*Special units of the*

## CARBOMATIC Radiant Heat Generator

are available for PALMERS—TENTERS—SINGERS—LOOP DRYERS—SLASHERS—and THREAD DRYERS.

The characteristic result of infra-red application—*drying from within*—completely changes old standards of drying time.

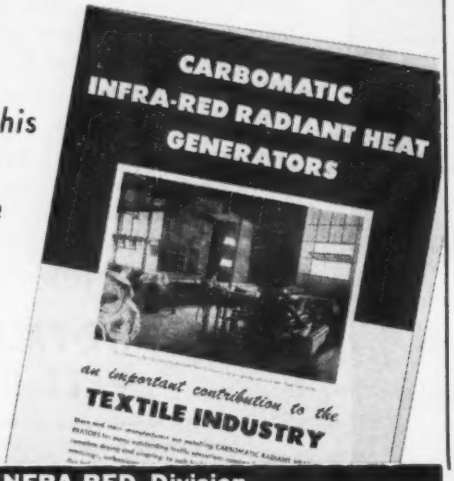
The CARBOMATIC uses any form of gas, either natural, manufactured, mixed or liquefied petroleum gases, in incandescent, flameless combustion, over a specially designed refractory surface. Here are some of its characteristics:

- **Gives uniform heat delivery the entire length of the burners.**
- **Quantity of heat is adjustable at each zone of drying.**
- **Completely automatic in operation.**
- **Maintenance cost is negligible.**
- **Operating cost is low.**
- **Improved finish plus increased yardage.**

Get full information now on this improved process and how it is applicable to your work.

*Write for this interesting descriptive circular*

**T-12**




**INFRA-RED Division**

**CARBOMATIC CORPORATION**

*Pioneers in Radiant Heat Burner Equipment, Gas or Electric*

1775 Broadway, New York 19, N. Y.

*Also H. W. Butterworth & Sons Co., Philadelphia, Pa.*

***In Canada:* CANADIAN TEXTILE ENGINEERING LTD.**
**980 St. Antoine St., Montreal, P. Q.**


## NEWS ABOUT MEN

Bigelow-Sanford Carpet Co., was tendered a testimonial dinner in New York recently by company officers and staff to celebrate the completion of his fiftieth year of service. He has been treasurer since 1917.

**Walter J. Koechlein** and **Eugene G. Lynch,** formerly assistant vice presidents, have been elected vice presidents of Commercial Factors Corp. effective Jan. 1. They both joined Commercial Factors in 1929 and were elected assistant vice presidents in 1935. Mr. Koechlein will continue his duties as contact officer in New York, while Mr. Lynch, who is in charge of the company's Boston office, will continue to make his headquarters there.

**J. Holmes Davis,** a director and member of the executive committee of Southeastern Cottons, Inc., New York has been appointed a substitute industry member of the National War Labor Board. Mr. Davis was president of the Peoples Savings Bank & Trust Co. of Wilmington in 1933, when he resigned to become president of Spofford Mills, Inc., Wilmington, N. C., of which he is now chairman of the board.

**A. M. Flanders** has been appointed vice president in charge of exports of Bruck Silk Mills, Toronto, Ontario.

**Neely Coble** has become vice president of Se-Ling Hosiery Mills, Inc., Nashville, Tenn. He resigned as divisional sales manager of Phoenix Hosiery Co. to accept his new position

**Dr. William P. Jacobs,** executive vice-president of the Cotton Manufacturers' Association of South Carolina, was sworn in Jan. 6 as a civilian member of the U. S. Navy manpower survey group No. 7 of the Sixth Naval district, to survey naval training schools in the Carolinas.

**Minor R. Adams,** vice president and superintendent of Parkdale Cotton Mills, West Gastonia, N. C., has been elected to the Gastonia city council. He succeeds **W. R. Crabtree,** who resigned to become general manager of the new Bennettsville (S. C.) plant of Firestone Cotton Mills.

**Edward J. Reilly** has been elected vice-president in charge of converting at the William L. Barrell Co., New York.

**J. S. Taylor,** manager of the Starmount Country Club and auditor of the Starmount Co. Greensboro, N. C., has resigned both positions to join the auditing department of Burlington Mills.

**Francis E. Simmons** heads the newly opened Washington, D. C., office of American Viscose Corp. Mr. Simmons was formerly Chief, Program Branch, Textile Clothing and Leather Division, of WPB and previously with Underwear Institute.

**Redley Sheldrick,** formerly with George E. Duffy Mfg. Co., Worcester, Mass., has become agent of Hayward Woolen Co., East Douglas, Mass.

**Harry Johnson,** after 36 years with Lorraine Mfg. Co., is in charge of the men's wear division of Airedale Worsted Mills, Woonsocket, R. I.

**A. L. Taylor,** of Oxford, N. C., has become assistant secretary and treasurer of Oxford Cotton Mills. Several years ago Mr. Taylor was secretary of Patterson Mills Co., Roanoke Rapids, N. C.

**William Macia,** lieutenant, USNR, now on duty at Brooklyn Navy Clothing Depot and formerly with A. M. Tenney Associates, was elected president of American Association of Textile Technologists. **Carl Taber,** Acetate Div., E. I. du Pont de Nemours & Co., was elected vice-president. **Pierre Sillan,** American Viscose Corp., becomes second vice-president; **Bernice S. Bronner,** Good Housekeeping Institute secretary; and **Ralph M. Gutekunst,** Hellwig Silk Dyeing Co., treasurer.

**T. L. Arnett,** formerly superintendent of the dye plant, Callaway Mills, La Grange, Ga., has been promoted to superintendent of dye plant and Valway Rug Mill.

**E. S. Foster,** formerly assistant overseer of cloth room, Hillside Plant, Callaway Mills, La Grange, Ga., has been promoted to overseer of designing and development, Valway Rug Mill of the same organization.

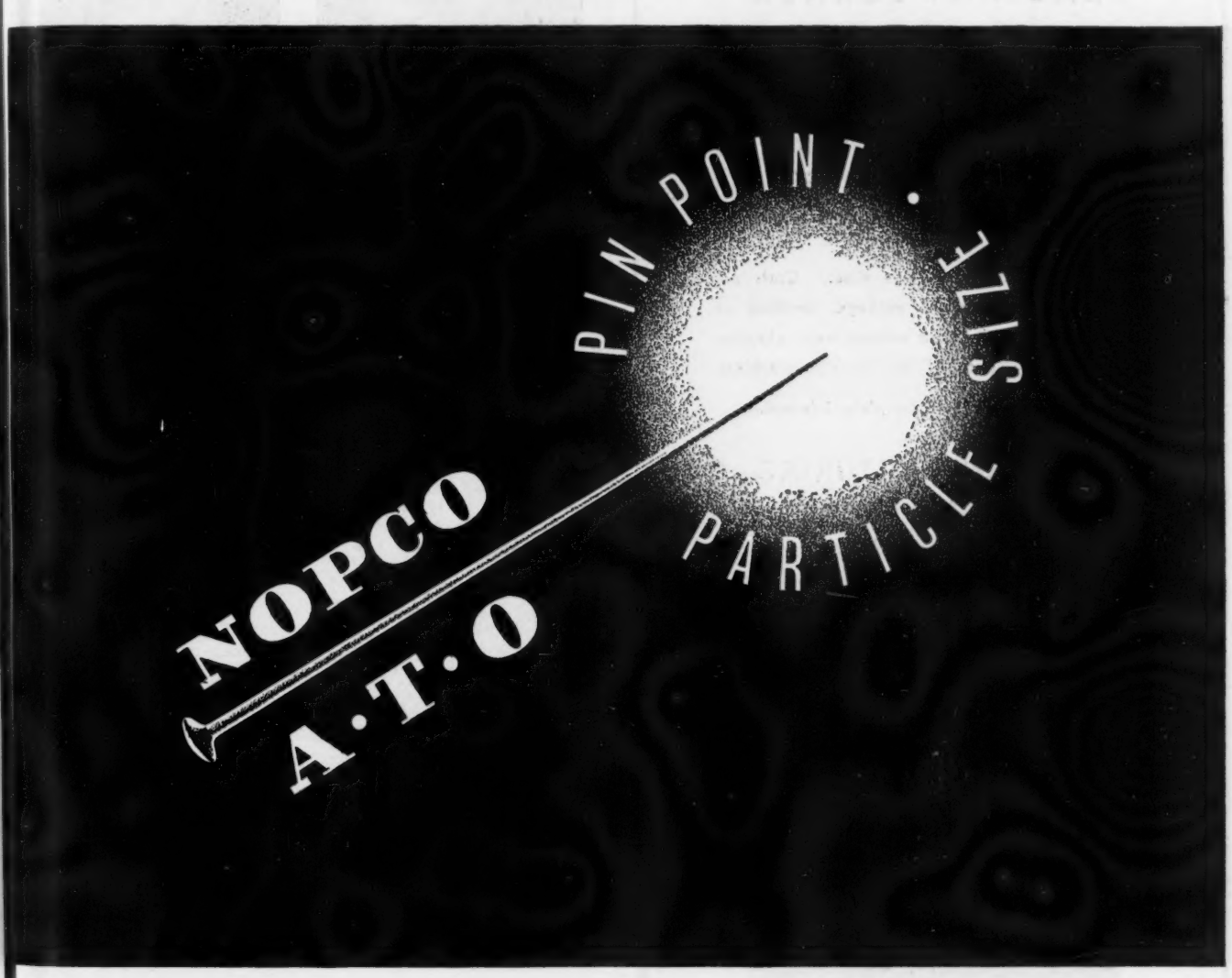
**Charles Menefee** will be manager of the Norwood (N. C.) Mfg. Co., recently acquired by Collins & Aikman Co. Mr. Menefee will reside in Charlotte, N. C.

**T. Vincent Wilking,** formerly personnel director of American Thread Co's. Kerr Mills, Fall River, Mass., has joined Hathaway Mfg. Co., New Bedford, Mass., as director of industrial relations.

**H. C. McKelvey,** for many years with Burlington Mills

## What has the point of a pin to do with

# WATER REPELLENCY?




SIMPLY THIS. 97 *microns* can perch comfortably on the point of a pin. And the particles of ATO—Nopco's new improved product which imparts water repellency to all types of fabrics—are of *micron size. They are as fine as that.*

Such uniform particle fineness gives Nopco ATO this advantage. It disperses readily in water to form a stable *emulsion.* And through its stability, this colloidal one-bath water repelling material suspends evenly in water, spreads uniformly throughout the fabric, and imparts a degree of water repellency not materially diminished by several washings or dry cleanings.

Nopco ATO leaves a satisfactory handle to the goods. It meets the Government's spray-rating tests. It's economical and easy to apply. And it's equally suitable for imparting water repellency to cloth or suitings for light weight sports apparel—Mackinaw cloth, showerproof overcoating and other heavyweight materials—industrial drills and other cotton fabrics—or rayon piece goods.

Write for full information today.

NOPCO PIN POINT · A·T·O PARTICLE SIZE

**NATIONAL OIL PRODUCTS COMPANY**

Boston • Cedartown, Ga. Harrison, N. J. Chicago • Richmond, Calif.

NOW!

RED-RAY
RADIANT BURNER

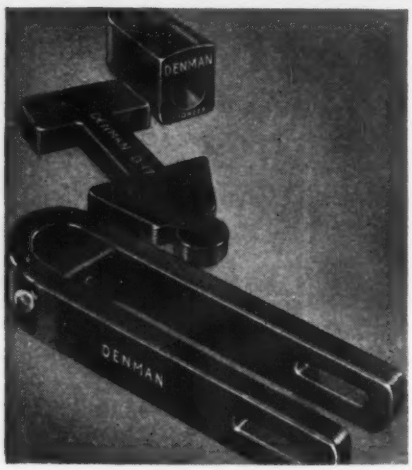
FOR
TENTERS
PALMERS
RESIN CURING OVENS
LOOP AND NET DRYERS
SLASHERS — SINGEING MACHINES

Speeds increased two to five times. Costs per yard lowered. Increased yardage, handled on existing machines obtained without major changes. Burners quickly installed on present machines.

*Write for bulletin and complete information.*

RED-RAY MANUFACTURING CO.
455 WEST 45th STREET, NEW YORK CITY

*Southern Representative:*
CAROLINA SPECIALTY COMPANY
1610 Hartford Rd., Charlotte, N. C.




DENMAN
PICKERS LUG STRAPS
HOLD-UPS
*Lowest Cost Per Loom Per Year*

*The* Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J., Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . Canada
Geo. Thomas & Co., Manchester, Eng. . . European Agent

## NEWS ABOUT MEN

*EARL L. SEMRAD, who has spent his entire business career in the men's wear field, and who has been appointed merchandise manager and stylist of men's wear for Textron, Inc., New York. The entrance of this vertically integrated firm into the men's wear field has just been announced with rayon pajamas the first item.*

*STAFFORD G. COWAN, well known in the hosiery field for a number of years, who has been appointed regional sales manager of the Middle Atlantic States for Textron, Inc., New York. Mr. Cowan has resigned from Dexdale Hosiery Mills with which he has been associated for the last eight years.*

Greensboro, N. C., in various capacities, has become agent for Amoskeag Fabrics, Inc., Manchester, N. H., succeeding **Henry H. Barker.**

**Oscar MarcAurele,** production manager, Ashland Corp., Jewett City, Conn., has been named superintendent of the weaving division of Associated Textiles of Canada, Ltd. He is succeeded at Ashland by **Thomas J. Culpepper,** formerly the superintendent of Eagle Phoenix Mills, of Columbus, Georgia.

**Norman W. McCall** has resigned as assistant overseer of carding, Upper Mill, Kendall Co., Pelzer, S. C., to become overseer of carding at the Clinton (S. C.) Mills succeeding W. G. Cox who died in December 1943.

**R. Harper Singleton,** manager of Icard (N. C.) Cordage Co. and prominent in the textile industry in that area for the last 47 years, is retiring Mar. 1 to return to his home near Morganton, N. C. Succeeding Mr. Singleton as manager at Icard will be **John R. B. Hawes,** currently at the home office of Samson Cordage Works in Boston, Mass. Samson acquired the Icard plant in 1936.

**Max A. Parrish,** for several years principal of Victory School, Gastonia, N. C., resigned Jan. 1 to become personnel director of the Gastonia plant of Firestone Cotton Mills there, succeeding **W. R. Crabtree,** who has been transferred to the management of a mill at Bennettsville, N. C., recently purchased by the Firestone interests.

**J. F. Davis** has resigned as superintendent of spinning at Lonsdale Co. of R. I., Seneca, S. C., plant, and has accepted a similar position with the Monarch unit of Monarch Mills, Union, S. C.

**James A. Sullivan** has accepted the position of superintendent of Postex Cotton Mills, Inc., Post, Tex.

**D. B. Summer,** formerly with Riverside & Dan River Cotton Mills, Danville, Va., has accepted a position as superintendent of Piedmont Cotton Mills, Eagan, Ga., succeeding **L. E. Lane** recently resigned.

**M. W. Carter,** formerly night superintendent at Mathews Mill, has resigned to become superintendent at Jackson Mills, Welford, S. C. **C. A. Barrett,** formerly general overseer of weaving, Mathews Mill, has succeeded Mr. Carter as night superintendent. **Clayton Thompson,** assistant overseer of weaving, has been promoted to general overseer of weaving. **Ray Bannister,** formerly second hand, has been promoted to assistant overseer of weaving. **Luna McKee** has been promoted from loom fixer to second hand of weaving.

**W. A. Smith,** formerly assistant master mechanic of Mathews Mill, Greenwood, S. C., has been promoted to master mechanic, succeeding **H. E. Haas,** who has retired. **Ira Jenkins,** formerly night machinist, has been promoted to assistant master mechanic.

# Caustic Soda

Penn Salt Liquid Caustic Soda is shipped in tank cars specially designed for speedier, safer unloading. These modern 8000-gallon tank cars have a protective lining, are insulated and are equipped with caustic resistant valves and interior fittings. They can be quickly and completely emptied—no wasted caustic, no lost time.

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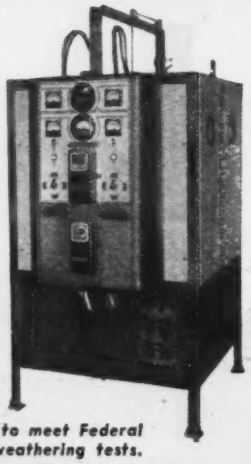

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## NEWS ABOUT MEN

and Ralph Kelly has been promoted to night machinist.

**J. C. Boyce** is the new superintendent of Mayfair Cotton Mills, Arcadia, S. C. Prior to joining Mayfair, he was associated with Jackson Cotton Mills, Wellford and Iva, S. C.

**J. A. Sullivan** has become superintendent of Postex Cotton Mills, Inc., Post, Tex.

**H. F. Hogue** has become superintendent of the American Yarn & Processing Co. plant at Whitnel, N. C.

**Charles C. Bagwell** has become superintendent of Martel Mills Corp., Lexington, S. C., plant.

**Paul Ostrander** has become superintendent of the plant of Goodyear Clearwater Mills, Cedartown, Ga., succeeding **J. J. Norton, Jr.**, who recently resigned to become superintendent of Monarch Mills, Lockhart, S. C., plant. Mr. Ostrander has been with Goodyear mills for many years.

**Jack Law** has become superintendent of the weaving department of Industrial Cotton Mills, Rock Hill, S. C. He was formerly with Highland Mills, Griffith, Ga.

**J. H. Ellis** has become superintendent of spinning at Martinsville (Va.) Cotton Mills. He was formerly assistant in spinning, spooling and warping at Gossett Mills, Williamston, S. C., plant.

(*Continued on page 204*)

## *Men in Armed Service*

**Halbert McNair Jones,** who was president of Waverly Mills, Inc., and vice president and treasurer of Scotland Sheeting Mills, both of Laurinburg, N. C,. prior to joining the armed forces, has been promoted to the rank of captain. Currently Captain Jones is assistant in the textile and cordage purchase section, Procurement Division, QM Depot, Jeffersonville, Ind.

**E. G. Warnock,** now lieutenant colonel and second in command of the Canadian Driving and Maintenance School at Woodstock, Ont., was formerly an official with Galt (Ontario) Knitting Co.

**Henry H. Rankin,** textile superintendent of South Fork Mfg. Co., Belmont, N. C., before entering the service of his country, has been appointed lieutenant (jg) in U. S. Naval Reserve.

**Maj. David Levine,** officer in charge of the field inspection section, Inspection Branch, Procurement Division, of Philadelphia Quartermaster Depot has been retired from active duty, and will return to his former connection as president of Hyde Park Clothes Company, Cincinnati, Ohio. He will be succeeded at the Depot by Maj. Charles H. King, who was formerly the executive officer of the Inspection Branch. Capt. George A. Litchfield, Jr., will replace Major King as executive officer.

**Ralph Steven Von Kohorn,** of Oscar Kohorn & Co., Ltd., and Rayon Export Corp., New York, will enter the Army on Feb. 22.

**David J. Collins,** formerly of Atlas Color & Chemical Co., Boston, Mass., has been promoted to first lieutenant. He is with the Signal Corps somewhere in the Pacific theater.

**Armand Emrich, Jr.,** who has been honorably discharged from the Army, has rejoined William L. Barrell Co. as sales representative, with headquarters in Atlanta, Ga.

**Harold Wetherbee,** on leave as vice president of Flint River Cotton Mills, Albany, Ga., and now lieutenant in Navy Air Corps, has been transferred to command the training school at Lenoir-Rhyne College, Hickory, N. C.

**W. L. Smith, Jr.,** lieutenant U.S.N.R., has been named head of purchase section, clothing division, Bureau of S. & A., to succeed Lt. Com. J. L. Truslow, who has been assigned to foreign duty.

**Jeremiah B. Bresnahan, Jr.,** for many years head of the accounting department at the old Amoskeag Mfg. Corp. in Manchester, N. H., now private first class in the Army, has been transferred to the Army War College in Washington, D. C.

**Torrey M. Tyner,** assistant superintendent of Stonecutter Mills, Inc., Spindale, N. C., has resigned to accept a commission as lieutenant (jg) in the U. S. Navy.

**Frank E. "Red" Cooper,** assistant sales manager for Tesco

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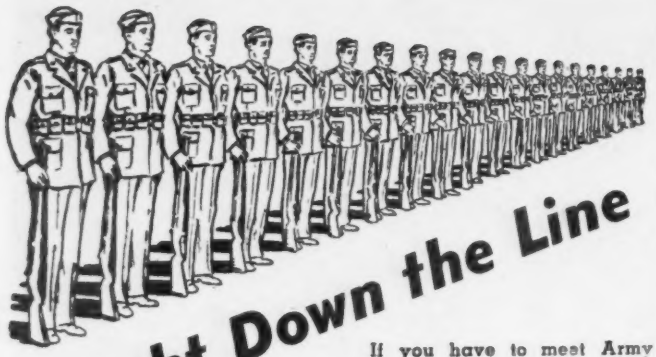

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Chemical Co., Atlanta, was inducted into the Army at Fort McPherson, Ga., Dec. 28. He is now stationed at Fort Barrancas, Fla.

**Elliott M. Loyless, Jr.,** who was associated with Anniston (Ala.) Mfg. Co., prior to his induction into the armed forces in March, 1942, has been promoted from first lieutenant to captain. Captain Loyless, a textile engineering graduate of Clemson College, is stationed at Camp Hood, Texas.

**James J. Griffith,** textile chemist with Tennessee Eastman Corp., Kingsport, Tenn., now in the armed services, has been promoted to lieutenant colonel in Army Air Corps.

**Harry H. Gibson,** son of L. B. Gibson, superintendent of Union-Buffalo Mills, Greenville, S. C., has been promoted from major to lieutenant colonel in the Army. He is at present in command of the 79th Ordnance Battalion at Camp Van Dorn, Miss.

*ALBERT K. DANNENBAUM, who has been promoted from captain to major. Major Dannenbaum is a research specialist on rubber, synthetic rubber and coated fabric products procured by the depot, where he is assigned to the Research & Development Division. Previously he had been president of Aldan Rubber Co. and Schwarzwaelder Co. of Philadelphia. He is a graduate of Philadelphia Textile School at Philadelphia, Pa.*

## Obituary

**Clarence E. Chaffin,** 61, president and treasurer of Bay State Thread Co., Springfield, Mass., died recently. He had been with this business 37 years and also was connected with the Westfield Braid Co. He had been treasurer, a director and member of the executive committee of the Cotton Thread Institute since it was formed in 1933.

**William B. Seidel,** 64, for many years owner and operator of Pioneer Hosiery Mills, Reading, Pa., died Jan. 5. He was recently owner and operator of a commission looping mill.

**David Moxon,** 62, recently appointed plant manager for Belding - Heminway - Corticelli Co., Putnam, Conn., and formerly agent and general manager for American Thread Co., Willimantic, Conn., with which he had been connected for 38 years, died at Willimantic on Jan. 25.

**Hjalmer Swanson,** 79, vice president and general manager of Empire Worsted Mills, Jamestown, N. Y., with that firm since 1890, died Jan. 28.

**Patrick McGraw,** 86, founder and president of P. McGraw Wool Co., Pittsburgh, Pa., died Feb. 2.

**A. Hoke Huss,** 67, secretary and treasurer of Rhyne-Houser Mfg. Co., Cherryville, N. C., died Jan. 27.

**Elisha H. Small,** 81, president of Small Bros., Fall River, Mass., died recently.

**Charles G. Duffy,** 73, president of Duffy Silk Co., Buffalo, N. Y., and in the silk industry for 50 years, died Feb. 3.

**Kenneth E. Shawcross,** superintendent of designing at Esmond Mills, Smithfield, R. I., died Jan. 23.

**Walter H. Hallsteen,** 53, vice president and treasurer of Ilg Electric Ventilating Co., Chicago, Ill., died Jan. 15.

**Curtis H. Veeder,** 81, founder of Veeder Mfg. Co., and a director of Veeder-Root Co., Inc., died Dec. 27, at Hartford, Conn. He began his industrial career with the Pope Mfg. Co., as a draughtsman. In 1895 he established the Veeder Mfg. Co., and was its first president. Mr. Veeder continued as president until 1928 when the company was merged with the Root interests as Veeder-Root, Inc. He was noted for his many inventions and held 150 patents in the mechanical field. His counting devices have long been used in the textile industry.

**Robert J. Harrington,** 70,

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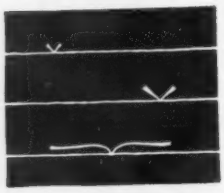

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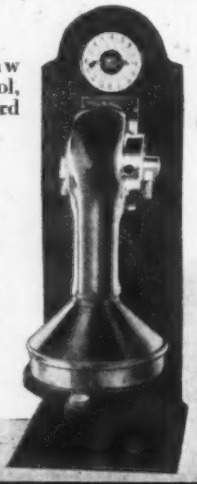

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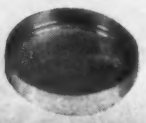

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owner of Harrington Co., of Dalton, Mass., died recently. He developed a yarn evener and founded the Harrington Yarn Evener Co., subsequently known as the Harrington Co., manufacturer of automatic yarn eveners and twist equalizers for woolen mules. He was active in the National Association of Woolen & Worsted Overseers, of which he was president two terms.

**Frank E. Paige,** 84, founder of Frank E. Paige & Co., Boston, Mass., a former director and treasurer of Seabright Woven Felt Co., Camden, Me., and for some years treasurer of Amherst College, died at Brookline, Mass., Jan. 30.

**Samuel Hodgson,** 75, former office manager of North Adams (Mass.) Mfg. Co., and of Hoosac Worsted Mills, died recently at Los Angeles, Cal.

**William E. Clifton,** retired overseer at Naumkeag Steam Cotton Co., Salem, Mass., died recently.

**Charles A. R. Ray,** vice president, manager and buyer of the Saxony Corp., Norwich, Conn., died recently. He was with the Saxony about 20 years and was previously president of Norfolk (Mass.) Woolen Co.

**Edwin Carl Ostermann,** 65, vice president and general manager of Fried-Ostermann Co., glove manufacturers, died at McComb, Miss., Dec. 12.

**W. B. Reynolds,** 87, who was associated with E. I. du Pont de Nemours & Co., Hopewell, Va., during World War I, and who was subsequently with Tubize Chatillon Corp., died Jan. 10 in Great Falls, S. C.

**E. S. Little,** 58, former mayor of London, Ontario, and secretary of Holeproof Hosiery Co., of Canada, a firm founded by his father, died at Delaware, Ontario.

**John R. White,** 66, retired southern manager of Corn Products Co., with headquarters in Greenville, S. C., died Jan. 16.

**John F. Long,** general manager of Laurel (Miss.) Mills, died Jan. 15.

**John Franklin Lowe,** 71, Belmont, N. C., traveling textile machinist for the Whitin Machine Works, died at his home Dec. 28.

**Lyman H. Burbank,** 83, retired overseer of the Amoskeag Mfg. Corp., is dead in Manchester, N. H., where he had resided for 60 years.

***DR. J. S. FONDA, assistant director of sales of Grasselli Division, E. I. du Pont de Nemours & Co. and with duPont for 18 years, whose death was recorded in these columns last month.***

**J. Frederick Talcott,** 77, president of James Talcott, Inc., textile and general factors, New York, died Feb. 6. He was with the organization founded by his family all his business life.

**Arnold D. Rundlett,** 52, superintendent of Joseph Noone's Sons' Co., Peterborough, N. H., died Dec. 28. He was a graduate of Lowell Textile Institute and for some years was with the Albany (N. Y.) Felt Co.

**George T. Northcutt,** 63, superintendent of the box factory of Holeproof Hosiery Co., Marietta, Ga., died Dec. 24.

**John W. Krantz,** 66, superintendent of the Marshall Field Finishing Mill, Spray, N. C., and prominent in the textile field for the last 40 years, died Jan. 15.

**Louis Wm. Cuddy,** 74, Charlotte, N. C., formerly for many years superintendent of the Gambrill & Melville Mills Co., Bessemer City, N. C., and Anson Mfg. Co., Wadesboro, N. C., who had retired several years ago, died recently.

**C. G. Bramlett, Sr., 63,** superintendent of carding at W. A. Handley Mfg. Co., Roanoke, Ala., died recently.

**A. B. Cobb, Sr., 75,** superintendent of Gambrill & Melville Mills Co., Bessemer City, N. C., died recently.

**R. F. Johnson,** for four years a departmental superintendent of Arcade Mill, Rock Hill, S. C., died at Ansted, W. Va., recently.

**W. Grady Cox,** 56, superintendent of carding at Clinton (S. C.) Cotton Mills, died Dec. 12.

## MOGUL METALLIZING SOLVES MAINTENANCE PROBLEMS

Your machine parts are wearing out faster than ever before under grueling war-time production schedules. Your replacements mean costly delays. You are also finding that many of your machine parts can't be had for love nor money!

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# NEWS ABOUT Mills

## Cotton Mill News

**Aponaug Chenille Co.**, a new $100,000 plant, has been opened by the Robert D. Sanders Corp., at Durant, Miss.

**Beaumont Mfg. Co.**, Spartanburg, S. C., is completing installation of new cafeteria at mill for use of employes, and will maintain a service schedule for each shift at plant.

**Bibb Mfg. Co.**, Macon, Ga., has begun excavations for new addition to former Meritas Mills property, Columbus, Ga., recently acquired for branch plant, and will proceed with superstructure for large unit for tire cord manufacture. Machinery and equipment is now being installed in present mill buildings. Entire project will cost about $500,000.

**Blackstone Webbing Co., Inc.**, Pawtucket, R. I., recently chartered with capital of $100,000 plans operation of local mill. Lee A. Worrell, Turks Head Bldg., Providence, R. I., is attorney and company representative.

**Buffalo Mills**, Shelby, N. C., have been sold to Jack C. Turk Co., New York. R. J. Woods was the former owner. A new corporation, Buffalo Mills, Inc., with principal office at Waco, N. C., has been formed. The authorized capital is $100,000; subscribed stock, $5,000. Jack C. Turk and Diana Turk, both of New York, and Irving Turk, of Shelby, N. C., were listed as the principals.

**Centreville Mill**, Richmond, R. I., owned by Dawn Fabrics, Inc., has been overhauled to produce wide web, elastic, synthetic and plastic fabrics. Plans have been made to employ 100 persons. Alfred Gobeille took over the property last summer.

**Consolidated Textile Corp.** plant at Pelham, Ga., which was purchased in the spring of 1943 by John B. Clark, of New York, and the Clark Thread Co., of Georgia, and which has been idle for several years, has since been renovated and machinery installed. The new unit has been put into operation with between 500 and 700 employed.

**Cranston** (R. I.) **Braid Co.**, recently organized, plans operation of local mill. Frederick C. Taylor, 79 Lexington Ave., Cranston, is head.

**Firestone Cotton Mills**, Woodstock, Ontario, is constructing a $216,000 addition designed to expand the company's work of spinning and weaving cotton for tire fabrics.

**Goodyear Fabric Corp.**, New Bedford, Mass. (previously reported), will provide equipment and facilities in former Nyanza Mills, Woonsocket, R. I., recently leased for branch mill, for employment of about 1,000 operatives. Output of plant will be for Government account.

**International Narrow Fabric Co.**, Keene, N. H., suffered damage estimated at nearly $100,000 in a fire which swept the three-story building occupied in part by the mill. Plant has been manufacturing braiding used on service uniforms.

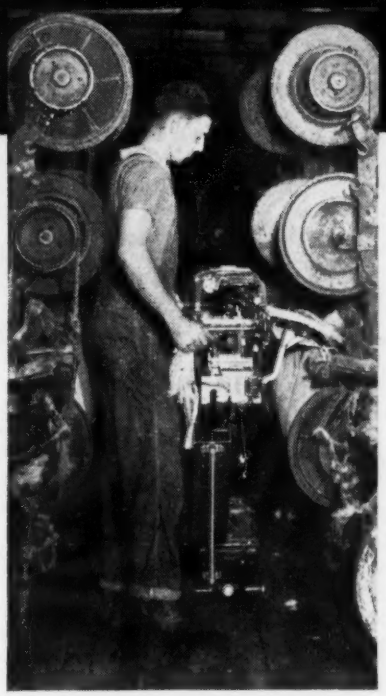
**Ludlow** (Mass.) **Mfg. & Sales Co.** (previously reported) has let general contract to Casper Ranger Construction Co., Holyoke, Mass., for proposed one-story addition, and work on superstructure is being placed under way. Project has a priority rating. Cost reported over $40,000, with equipment.

**Marshall** (N. C.) **Spinning Mills** have been incorporated with authorized capital of $52,500. Incorporators are Sheldon M. Roper, W. Henkle Smith and N. M. Rudisill, of Lincolnton, N. C.

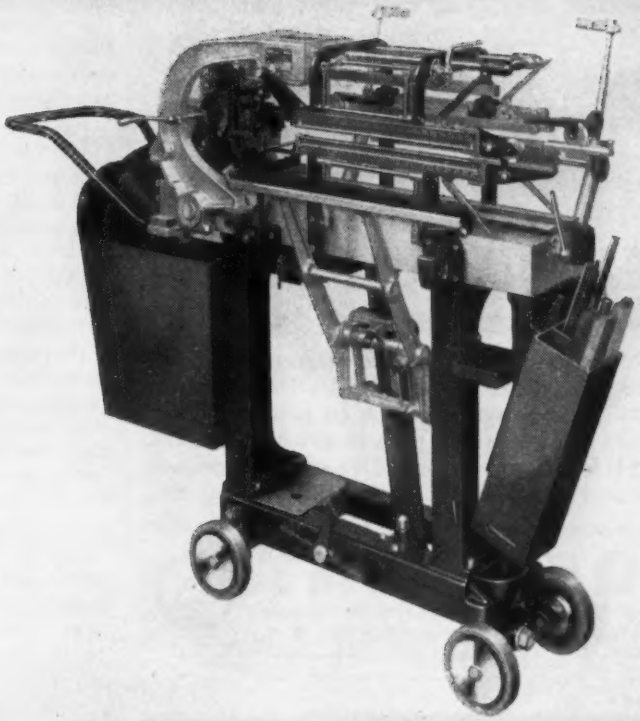
**San Joaquin Valley, Calif.**—A survey to determine feasibility of establishing a cotton-textile industry is being carried on by five of the counties which would be affected. They are Kings, Tulare, Kern, Fresno, and Madera.

**Morgan Cotton Mills**, Laurel Hill, N. C., have begun an expansion program, which includes an extension, 100x125 ft., to the Richmond unit. WPB has granted permission for this building as the Richmond unit has a contract for the production of tire fabric for

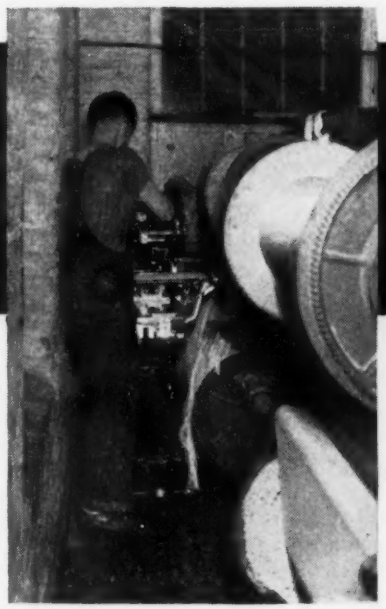
# DESIGNED FOR NARROW LOOM ALLEYS and CRAMPED QUARTERS...



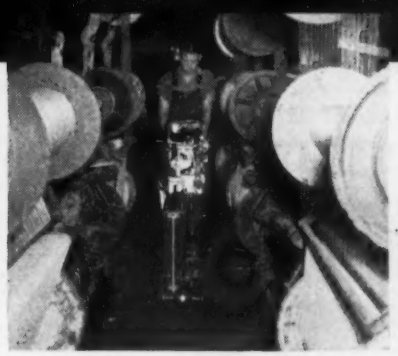
Working directly in back of the loom, the operator ties-in the warp in sections, each section or load being approximately 15" wide. The machine is hand-operated, usually at about 300 knots a minute.



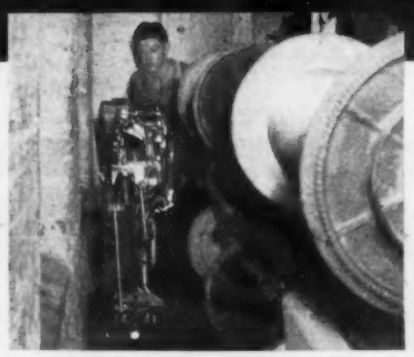
## BARBER-COLMAN *Portable* WARP TYING MACHINE



A "stumbler" on the knotter eliminates missing any ends, producing a uniform row of firm knots.



The machine is light, sturdily built, and can be easily and quickly moved from one location to another.



It is compactly designed so it will work in alleys as narrow as 12". Models are available for cotton, wool, or rayon.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

**BARBER-COLMAN COMPANY**

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

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**How DEVOPAKE hides and covers *any* surface *in just one coat!***

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*The 190th year of the Oldest Paint Maker in America*

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*Specializing in*

TEXTILES FOR MORE THAN A QUARTER OF A CENTURY

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PAY ROLL CONTROLS
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PENETRANTS • DETERGENTS
REPELLENTS • SOFTENERS
FINISHES

BURKART-SCHIER CHEMICAL CO.
CHATTANOOGA, TENNESSEE




the Government which will engage its facilities 100%. Southeastern Construction Co., Charlotte, N. C., has this contract. Fourteen housing units, made up of three-room family apartments, have been started.

**Nashua (N. H.) Mfg. Co.** reports a net profit of $893,551 for the year ending Oct. 30. President Robert Amory said sales reached an all-time peak. Products totalling $14,428,000 were sold directly to Government agencies.

**Palmetto Textiles, Inc.,** Woodruff, S. C., has been formed with authorized capital of $50,000 to deal in cotton, textile goods and other commodities and to manufacture such goods. Henry Rothfield is president; J. F. Rogers, secretary-treasurer.

**Piedmont Fabrics Corp.,** Reidsville, N. C., recently organized with capital of $100,000, plans operation of mill in that vicinity for production of cotton specialties. W. B. Pipkin, of local Edna Mills Corp., is one of the heads of new company.

**Riverton Mills, Inc.,** Washington, Va., has removed company headquarters to 2001 North Moore St., Arlington, Va.

**Stonecutter Mills Co.,** Spindale, N. C., headed by Kenneth Tanner, is splitting its capital stock on a basis of 40 shares each of newly created $5 par Classes "A" and "B" for each outstanding capital share of $100 par. This split-up, which is not a stock dividend, increases the company's capital stock account to $1,862,800.

**Tolar, Hart & Holt Mills, Inc.,** Fayetteville, N. C., plans a postwar development program at the mill, including facilities for increased capacity and modernization.

**Yarn Specialties, Inc.,** Clover S. C., has been formed with authorized capital of $50,000 to manufacture, dye and bleach and sell cotton, cotton yarns, linens, etc. Cary C. Boshamer is president; H. M. Boshamer is vice-president; E. B. Blackstock, secretary; David L. Baldwin, treasurer.

## Wool Mill News

**Ames Worsted Co.,** Southbridge, Mass., has work under way on one-story addition to local Hamilton woolen mill, including alterations and improvements in present structure, for which general contract recently was let to H. U. Bail Sons, Southbridge. Cost reported close to $30,000.

**Blackstone Plush Mills,** Clinton, Mass., are planning to more than double their capacity in production of upholstering fabrics and women's cloakings. They have purchased the large brick building formerly owned by what was then Bigelow-Hartford Carpet Mills, which contains about 150,000 sq.ft. of floor space. Blackstone occupies 125,000 sq.ft. in the old plant.

**Dale Worsted Mills, Inc.,** Woonsocket, R. I. (previously reported), organized with capital of $200,000, will be an affiliate of local Airedale Worsted Mills, and will operate former mill of Lippitt Woolen Co., lately purchased by last noted company. Improvements are being made in plant.

**Dover, N. H.**—The No. 1 mill building and the No. 1 picker building, formerly operated by the American Woolen Co., have been taken over by Sylvania Electric Products, Inc., of Salem, Mass. E. H. Powers of Ipswich, Mass., will be manufacturing superintendent.

**Glenside Woolen Mills,** Willow Glen, N. Y., is subject of a negotiation for sale by H. M. Mott of Flint, Mich., to James J. Axelrod of Boston. If consummated this will mark the third time that the mills have changed hands in the last eight years, two of the sales being the windup of bankruptcy proceedings.

**Los Angeles (Calif.) Felt Co.** was damaged by fire on Jan. 11, with a loss said to amount to "several thousand dollars."

**Monadnock Carpet Co.,** Milford, N. H., owned and operated since 1939 by Arthur E. Dunn, has been purchased by Edward I. Goldenburg, head of the Vernon Rug Mills of New York. It is planned to enlarge the capacity and incorporate an adjacent building with the main factory. Harry L. MacCready will be in charge of the enlarged mill and Mr. Dunn will continue as assistant for a time.

**Puritan Rug Mills, Inc.,** 714 State Mutual Bldg., Worcester, Mass., incorporated recently with capital of 100 shares of stock, no par value, plans operation of local plant for manufacture of small rugs. Thomas F. Shea is president; and K. R. McDermott, 12 Montrose St., Worcester, treasurer and representative.

# Now Available!

## COLEMAN pH ELECTROMETER

A limited number of these famous reliable pH electrometers are now available. Reasonable priority equipments. We suggest ordering immediately.

ACCURATE to within the limits of the glass electrode, namely .05pH! Used extensively in the laboratory and for plant control. Eliminates glass electrode breakage because of special construction. Sealed chassis prevents moisture from causing leakage error.

Single scale, 0-13 pH by 0.1 pH divisions. Complete with Sealed Ag-Ag Cl Glass and Reference Electrodes, buffer solution, tubes, batteries. Price $180.00.

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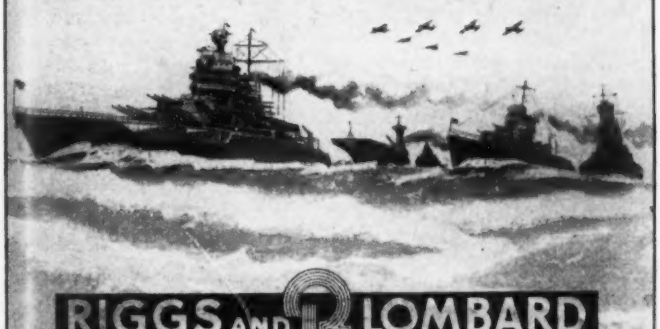
Fulling Mills • Washers — Batch and Continuous • Derby Dry Cleaners • Piece Dye Kettles • Stock Dye Kettles • Carbonizing Ranges • Dye Becks • Rope Soapers • Soaping Machines • Pusher Mills • Soap Distributing Systems • Top Dyeing Machines • Progressive Jigs • Yarn Steamers



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INCORPORATED
*Foot of Suffolk Street ··· Lowell, Mass.*

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*Package Dyeing Installation, Extracting and Drying in a complete cycle on the same material carrier*

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*Builders of*

**Cotton & Wool Dyeing Machines**

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**Beams • Packages • Rawstock • Skeins**

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*All Subject to Required Priorities*

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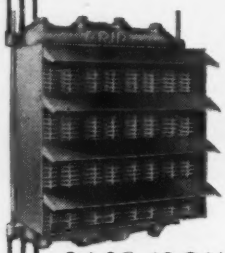
*Replacement Parts for Existing Machines Can Be Furnished*

**There's No Soldered, Brazed, Welded or Expanded Connection *in this heating Section -***

GRID condenser "fin" sections are made in one piece of high test cast iron — the same physical properties as cast iron radiators, and you know how long they last. In GRID heating sections there's nothing to become loose—nothing to develop leaks or breakdowns—and being made of similar metals there's no electrolysis to cause corrosion, with its resultant breakdowns and heating failures.



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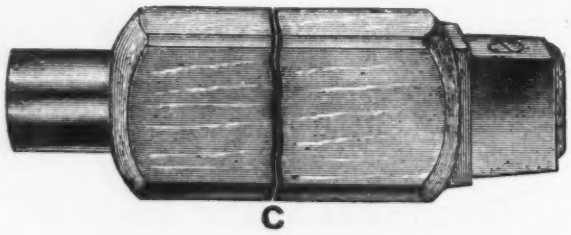
**GRID UNITS WILL STAND WEAR AS LONG AS THE PIPES FURNISHING HOT WATER OR STEAM TO THEM—**

Because they are built to last for years—and without maintenance expense. Lint, dust or particles in the air will not plug up GRID Unit Heaters. GRID is especially recommended for textile mill installations. Ask for complete details and capacity tables.

D. J. MURRAY MANUFACTURING CO.
WAUSAU, MICHIGAN
*Offices in Principal Cities*

**GRID UNIT HEATER**



**DYE STICKS**

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

**FRANK BAILEY Cedar Brook, N. J.**

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GREENVILLE • SOUTH CAROLINA

*Engineers* *for more than 40 years*

TEXTILE MILLS • CHEMICAL PROCESS PLANTS
PULP & PAPER MILLS • WASTE DISPOSAL
STEAM POWER PLANTS • STEAM UTILIZATION
WATER • APPRAISALS • PLANS • REPORTS




**West Bend** (Wis.) **Woolen Mills** have plans under way for remodeling and improving a second section of mill, and will carry out work soon. This is a continuation of a program begun in another part of plant several months ago. John Topzant, 424 East Wells St., Milwaukee, Wis., is architect.

**Volney Felt Mills, Inc.,** Fulton, N. Y., sustained a fire loss at plant recently when a one-story warehouse was destroyed. Loss reported close to $70,000, with equipment. It is proposed to rebuild.

## Rayon & Silk Mill News

**Aldora Mills,** Barnesville, Ga. (previously reported), has let general contract to Frank Binford, Thomaston, Ga., for erection of proposed new addition to mill, designed to increase output by about 60%. Company is an interest of General Tire & Rubber Co., Akron, Ohio.

**American Enka Corp.,** Enka, N. C.—Contract for the main building for spinning, washing, drying and shipping in the tire yarn program has been awarded to Potter & Shackelford, Greenville, S. C., and construction is under way.

**American Viscose Corp.,** Front Royal, Va., has installed special equipment to eliminate discharge of industrial wastes into the nearby Shenandoah River. The method was perfected by the chemical and engineering staffs of the plant. All wastes from the plant are so treated and neutralized that the water, according to Dr. W. L. Moody of the Virginia Commission of Game and Inland Fisheries, is "just about neutral or normal." The installation cost $250,000.

**American Viscose Corp.,** Roanoke, Va., unit, is now manufacturing rayon fabric for bombing plane tires on automatic looms which have been installed in space formerly occupied by the wet reeling departments. The plant is using Rayflex, an extra-strength rayon yarn made at the company's unit at Front Royal, Va.

**Belding Heminway Co.,** Putnam, Conn., has recently added rayon thread to its line, and plans extensive output.

**Blackstone Textiles, Inc.,** Pawtucket, R. I., recently organized, plans operation of mill in this vicinity for manufacture of rayon products. Woodwarth L. Carpenter, Industrial Trust Bldg., Providence, R. I., is attorney and representative.

**Canadian Celanese, Ltd.,** Drummondsville, Que., (previously reported) has awarded general contract to Stewart Construction Co., Ltd., Sherbrooke, Que., for proposed one and four-story additions, 157x295 ft., and 75x150 ft., respectively, reported to cost over $350,000, with equipment, and work is being placed under way. Company also will build new power substation to cost about $80,000.

**Deering, Milliken & Co., Inc.,** New York, N. Y., have awarded general contract to Daniel Construction Co., Greenville, S. C., for new rayon processing mill on 240-acre tract of land near Clemson, S. C., (previously reported) comprising several one-story units, totaling 100,000 sq.ft. floor space, estimated to cost about $2,000,000. Construction began Jan. 3. Plant will be equipped to handle high-tenacity rayon yarn and will be operated by Excelsior Mills, Inc., Union, S. C., an interest of first noted company, which will also be active in the construction. Project has a priority rating. J. E. Sirrine & Co., Greenville, are architects and engineers. About 50 homes for key workers will be built.

**Duplan Corp.,** New York, has purchased the Summit Yarn Mill, Lincolnton, N. C., and is taking over operations. The mill, which has been operated by Belding-Heminway-Corticelli, New York, has 4,000 spindles. It was formerly owned by the Childs interests.

**Drackett Co.,** Cincinnati, Ohio, plans expanded post-war use of soybean for fiber, plastics and paints.

**Industrial Rayon Corp.,** Cleveland, Ohio, has let gentral contract to George A. Rutherford Co., 2725 Prospect Ave., Cleveland, for several one- and two-story additions to mill, including improvements in present plant, to be used for high-tenacity rayon production. Cost about $600,000, exclusive of equipment. Project has a priority rating. Wilbur Watson & Associates, Cleveland, are architects and engineers.

**North American Rayon Corp.,** Elizabethton, Tenn. (previously reported), has awarded general contract to Hughes-Foulkrod Co., Philadelphia, Pa., for proposed additions to mill for high-tenacity

MAKE THE NAME—
"Industrial"
YOUR STANDARD
for
CUT GEARS
CUT RACKS
CUT SPROCKETS

We have the facilities, the equipment, the personnel and the "know-how" to give you the kind of service and cooperation you need for cut gears of any type, in any quantity—any material.

We also produce sprockets for Roller and Silent Chains and do precision surface grinding. Latest modern equipment.

Let us have your next order, or visit our plant when in Chicago.

The Plant that Quality and Service Built

CHICAGO'S FASTEST GROWING GEAR PLANT

INDUSTRIAL GEAR MFG. CO.
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ALDON SPINNING MILLS
ALFRED W. CAVLDON

Spinners of Fine Woolen
Merino & Specialty Yarns

SELL DIRECT TALCOTTVILLE, CONN.



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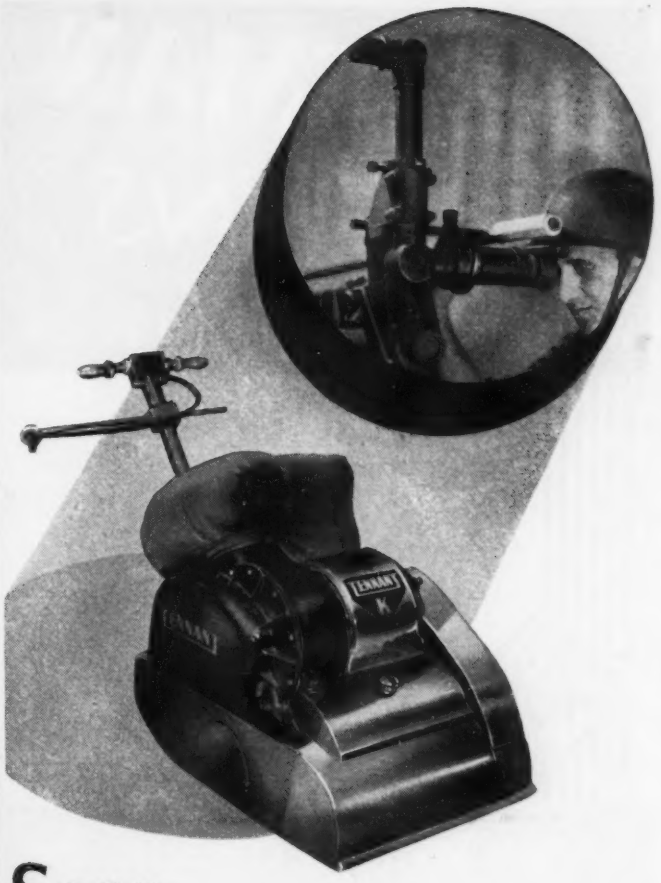
Strip in Rolls

This interesting folder describes the working ranges of twenty-seven types of slitters and roll-winders for use in the fabric converting and rubber industries, for cutting into strip and winding into rolls. Write for your free copy today.

CAMERON MACHINE COMPANY, 61 Poplar Street, Brooklyn 2, New York
MIDWEST OFFICE: Harris Trust Building, 111 West Monroe Street, Chicago 3





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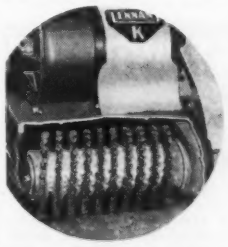
the manufacture of Tennant Floor Machines will no longer be eclipsed by the production of Gun Sights

TENNANT FLOOR MACHINES

Perform an important War Service in maintaining SAFE, Clean Floors in war factories, mills and offices throughout the nation. Clean floors help to reduce accidents, speed production and facilitate the movement of materials through the plant.

The service of Tennant field representatives is available without cost. If you have floor cleaning and maintenance problems *now* or want to make *plans for the future*, write or wire today.



TENNANT MODEL K loosens and picks up imbedded dirt, grime and metal cuttings by the exclusive Tennant *dry* cleaning method.

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*Pioneers in modern floor maintenance*

TENNANT SYSTEM OF INDUSTRIAL FLOOR MAINTENANCE

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WORSTED • COTTON • SPUN RAYON
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NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

*Simplified* DESIGN
*Flexible* POWER
*Better* EVAPORATION
*More sensitive* CONTROL
SOUTHWORTH HUMIDIFIER
Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.
NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.
THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE



rayon manufacture. Cost reported over $2,000,000, with machinery. Moran, Proctor, Freeman & Mueser, 420 Lexington Ave., New York. N. Y., are engineers.

**Plymouth Fabrics, Inc.,** 26 Bedford St., Fall River, Mass., recently chartered with capital of $100,000, plans operation of local mill for manufacture of cotton and rayon goods. Harry L. Sinoff, 724 Washington St., Brookline, Mass., is president and treasurer.

**Queen Anne Mills,** Ellenboro, N. C., recently taken over by new interests, the Neisler Mills organization of Kings Mountain, N. C., will manufacture rayon fabrics. Additions are being made.

**Raycord, Inc.,** Spartanburg. S. C., has been formed with authorized capital of $120,000 to manufacture cotton, rayon, wool, and other textiles. Officers: V. M. Montgomery, president and treasurer; Benjamin O. Johnson, secretary.

**Varney Mills,** Petersborough, N. H., have arranged for the Keene-Peterborough area of the Public Service Co. of New Hampshire to use the mills' electric power system as an auxiliary to the main supply.

## Knitting Mill News

**Dover Knitwear, Inc.,** New York, N. Y., has been organized to operate a local knitting mill. Jay E. Rubinow, 843 Main St., Manchester, Conn., is principal incorporator.

**Gem Knitting Mills, Inc.,** New York, N. Y., care of Alvin I. Perlmutter, 239 Broadway, New York, attorney and representative, recently chartered with 200 shares of stock, no per value, plans operation of mill in that vicinity.

**Judith Hosiery Co.,** building, Niota, Tenn., has received a raised bid of $16,275 from James L. Burn, of Niota, which has been confirmed by the Chancery Court. The building was offered for sale at public auction under a decree of the Chancery Court, Athens, Tenn.

**Ladifabrics, Inc.,** Pawtucket, R. I., has bought the Walnott Knitting Mills of Utica, N. Y., and the five-story Kronk building of that city. The company will consolidate operations of its two plants in that building. Max Schiffman is president and Alex Madans, treasurer.

**Laconia, N. H.**—The former G. H. Tilton & Sons hosiery mill in Laconia has been sold to the Sterling Engineering Corp., manufacturer of aircraft accessories.

**Moorhead Knitting Co,** Harrisburg, Pa., stockholders have approved a revised and amended reorganization plan for the company, which if approved by the Federal Court, provides for distribution of $125,000 among creditors and other claimants. Plan has also been approved by 77% of the secured creditors, 79% of the unsecured creditors, and over 75% of the preferred stockholders.

**Penmans Ltd.,** textile manufacturers with head office in Paris, Ontario, recently opened a branch plant in a purchased building in the village of Ayr, a few miles from the main plant. Maawell Covert, of Paris, is manager of the new knitting mill.

**Ware** (Mass.) **Knitters, Inc.,** have plans under advisement for rebuilding of mill recently destroyed by fire. An official estimate of loss has not been announced.

**York Knitting Mills, Ltd.,** Toronto, Ont., have begun erection of one-story addition, about 80x160 ft., for which general contract recently was let to Pigott Construction Co., Ltd., Hamilton, Ont. Cost over $60,000, with equipment. Marani & Morris, Toronto, are architects.

## Processing Plant News

**Apex Finishing Co.,** Babylon, L. I., care of Thomas F. Dougherty, 25 Broad St., New York, N. Y., attorney and representative, recently organized, plans operation of local dye, print and finish mill.

**Balloon Dye Works,** San Diego, Calif., is erecting a concrete addition to cover an area 45x50 ft. and to cost $10,000.

**Slater Dyeing & Finishing Co.,** Pawtucket, R. I., recently chartered with capital of 300 shares, no par value, plans early operation of local mill. Thomas H. Bryant, 14 Walker St., West Warwick, R. I., is principal incorporator.

**Southern Chemical Cotton Co.,** Alton Park, Chattanooga, Tenn., has plans for new addition to mill for production of chemical cotton in sheet form, to be used in connection with the high-tenacity rayon program for tire cord manufacture. Cost estimated about $200,000, with equipment. Project has a priority rating.

12599
SUCCESSFULLY SERVING THE WAR EFFORT . . .
ARKANSAS PRODUCTS
Designed to meet rigid government specifications are rendering a distinct service toward the ultimate victory . . .

## MILDEW INHIBITORS

***for various types of cotton cloth and yarn***
***non-toxic—non-irritating***

FUNGICIDE M: a single product combining a mildew inhibitor and water repellent for producing a mildewproof water repellent finish on insect netting, tapes, sheeting, webbing, thread, etc., in one operation.

FUNGICIDE PG: for mildewproofing duck, plied-yarns, etc., by the two bath method.

FUNGICIDE GM: used in conjunction with water repellents in a one bath treatment to mildewproof cottons and impart a water repellent finish.

FUNGICIDE A: a mildewproofer for cloth coating processes . . . — used directly in the vinyl resin solution.

AQUAROL*: produces a water repellent finish on uniform cloth, overcoatings and other military fabrics . . . — may be used in a single bath treatment with Fungicide GM to impart water repellency and mildew resistance to cottons . . . — also used in single bath with Arko Fire Retardant to produce water repellency and fire resistance.

ARKO FIRE RETARDANT: for flameproofing uniform cloth, tentage, felts, etc.

CULOFIX L*: used as an after treatment in last rinse to prevent color bleeding in water of direct dyed cotton or rayon.

* Reg. U.S. Pat. Off.

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Doc. Steelstrap is a symbol of Acme service to all industry . . . available to everyone who feels that shipments can be speeded up and safer delivery at destination is worth looking into. Acme Steel technical men are trained in just these problems—their recommendations have saved critical material, saved time, saved tare weight—saved in hundreds of ways and thousands of dollars.

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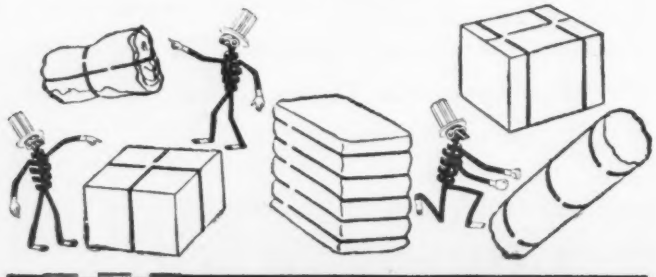
Acme Steelstrap is now serving the need and speed of war—passing shipments to far flung fighting fronts . . . forward looking industries are already applying these lessons to planning for peacetime products.

Write for Acme shipping service including packing, strapping, and Acme Unit-Load. Our technical men are available without obligation.



ACME STEEL CO. CHICAGO

ACME STEEL COMPANY
2839 ARCHER AVENUE, CHICAGO, ILLINOIS

## NEWS ABOUT MEN

(Continued from page 190)

**Robert A. Morgan** again has become associated with Moore, Thies & Morgan, textile engineers with offices at Charlotte, N. C., and Rome, Ga., after having been general manager of an ordnance plant at Little Rock, Ark., for the last two years.

**Elliott B. Grover** has been named head of the Department of Yarn Manufacturing in the Textile School of North Carolina State College at Raleigh, N. C. He comes from Manville-Jenckes Corp.

**Edgar W. Dunham** and **L. C. Thomas** have been named as assistant secretaries of Erwin Cotton Mills Co., Durham, N. C.

**Harold A. Gibbs,** Enka, N. C., has been elected president of the Tompkins Textile Society at North Carolina State College, Raleigh, N. C.

**George Crossland,** for six years with Marietta Silk Co., Columbia, Pa., is now with E. I. Du Pont de Nemours & Co. Inc., Penn's Grove, N. J.

**B. Harper Singleton** on March 1 will retire as manager of Icard (N. C.) Cordage Mfg. Co.

**J. H. McDonald,** formerly with Kings Mountain Mfg. Co., has become superintendent of Clover (S. C.) Spinning Mills.

**R. E. Lee** has accepted the position of superintendent of Arnall Mills, Sargent, Ga.

**A. B. Peterson** has been promoted to assistant superintendent of Pacolet Mfg. Co., No. 4 unit, New Holland, Ga. He was formerly head of the spinning department.

**Paul A. Franks,** formerly head of the carding department of the Riverside division of Riverside & Dan River Cotton Mills, Danville, Va., has become superintendent of Swift Spinning Mills, Columbus, Ga.

**F. G. Revels** has resigned as superintendent of weaving of the Texas Textile Mills, McKinney, Texas, and has accepted a similar position with Prattville (Ala.) Cotton Mills, Inc.

**Elie Rivollier** has become superintendent for Wovencraft, Inc., Clinton, Mass. He was formerly with John C. Wellwood Corp.

**Robert Caldwell,** formerly of Newton, N. C., arrived in Gastonia, N. C., where he becomes assistant cotton classer at Firestone Cotton Mills.

**Cabot W. Penny** has been made superintendent of Wyandotte Worsted Co., Pittsfield, Mass., to succeed **Donald Jones** who has retired. Mr. Penny has been with the company 10 years, as designer and assistant manager.

**Barney Dalton,** head electrician, Spindale (N. C.) Mills, Inc., has resigned to become supervisor of electrical equipment at American Yarn & Processing Co., Mount Holly, N. C., and six cooperating textile plants in that area.

**Carl D. Welch** has become general superintendent of carding at Phenix Mills, No. 2 plant, Kings Mountain, N. C. He was formerly assistant superintendent of York (S. C.) Mills, plant No. 1.

**J. H. Burgess,** superintendent of Scottdale (Ga.) Mills, has resigned to become associated with Marion (N. C.) Mfg. Co.

**J. L. Ouellette** is now overseer of carding at Meredith (N. H.) Linen Mill.

**B. F. Featherstone** recently retired as overseer of spinning at Talbot Mills, North Billerica, Mass.

**Arthur Koerner,** employed for many years by Shawsheen Mills of American Woolen Co., Andover, Mass., as overseer of mending operations, has concluded his duties and been succeeded by **Charles J. Frey,** who was formerly overseer of mending at Methuen (Mass.) International Mills.

**Robert A. Rule** has been appointed personnel director of Holston Hosiery Mfg. Co., Knoxville, Tenn.

**H. T. Gilbert,** formerly with Exposition Cotton Mills, Atlanta, became superintendent of Abbeville (S. C.) Cotton Mills about Nov. 1, succeeding **Fred Garlington,** who resigned.

**R. W. Hollis,** for 15 years connected with the Alabama Mills, Inc., operating a number of cotton mills in Alabama, and more recently superintendent of the unit of the company at Jasper, Ala., has resigned to accept a similar position with Algodon Mfg. Co., Bessemer City, N. C.

**Aubrey Hobbs** has been made superintendent of Samoset Mills, Talladaga, Ala., to succeed **Frank K. Petrea,** who has resigned.

**O. L. Smith,** formerly superintendent of spinning of Riverside division of Riverside & Dan River Cotton Mills, Danville, Va., now holds a similar

## For improved coatings and better finishes

# This is Ethocel

## Makes flexible coatings even at dry ice temperatures

*Make a note of these features!*

**TOUGHNESS**
**RESISTANCE to heat**
**SOLUBILITY in low cost solvents**
**LOW FLAMMABILITY**
**FLEXIBILITY at low temperatures**
**LOW SPECIFIC GRAVITY**
**STABILITY to light**
**COMPATIBILITY with most plasticizers and resins**

Ethocel, as a plastic molding material, is unique among thermoplastics because of its exceptional low temperature flexibility. *And it is this same feature that becomes extremely valuable when Ethocel is added to coatings and finishes.*

Unmodified films of Ethocel can be creased without breaking—even at −60°F. In fact, this superior low temperature flexibility is inherent in Ethocel itself and not dependent on added plasticizers and resins. This characteristic is extremely useful for the prevention of checking in lacquer mixtures and will effect similar improvements when Ethocel is used in nitrocellulose compositions.

Ethocel is at present largely used for war purposes. But sooner or later restrictions will be lifted and it would be advisable to remember its low temperature flexibility and other useful features listed at the right.

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American production, burdened with a tremendous war-time load, is girding itself for the "big push", the performance that will pay-off in victory!

Dary Ring Travelers are doing their part in this 1944 production picture by lasting longer under tougher conditions and permitting better spinning and twisting. There are 8 definite reasons why Dary Travelers are able to meet to-day's requirements:

1. Every Dary Traveler is of guaranteed weight, temper and stock.
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3. Only the latest approved methods plus specially designed tools are used in making superior Dary Travelers.
4. For over 4 decades skilled workmen have been responsible for turning out "better" Dary Travelers.
5. Dary Travelers are always accurately finished.
6. Special methods assure proper and uniform hardening.
7. Detailed inspection and rigid tests are "musts" in the Dary process.
8. Dary Travelers are unequalled for resistance to wear.

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*SYMBOL OF SUPERIORITY*
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**Taunton, Massachusetts**

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JOHN H. O'NEILL, Box 720, Atlanta, Ga.
H. REID LOCKMAN, Box 515, Spartanburg, S. C.


position with Tifton (Ga.) Cotton Mills.

**R. H. Coolidge**, a departmental superintendent at Excelsior Mills, Union, S. C., has resigned to return to a similar position in Maine, and has been succeeded by **Harold W. Berry**, of Cedartown, Ga.

**W. C. Cheek** has resigned his position with Vamoco Mills Co., Franklinton, N. C., and has become superintendent of weaving, third shift, at Angle Silk Mills, Rocky Mount, Va.

**J. L. Beard** has accepted the position of superintendent of Cliffside Mills, Avondale, N. C., unit, succeeding **H. C. Rollins** who resigned to accept a similar position with Carter Fabrics Corp., Greensboro, N. C.

## NEW PUBLICATIONS

### Research Report on Absenteeism

**ABSENTEEISM: MANAGEMENT'S PROBLEM; by John B. Fox and Jerome F. Scott; Business Research Studies No. 29; Harvard Bureau of Business Research, Harvard University, Boston; $1.00.**

Results of a study of absenteeism made by the Harvard Business School at the request of the WPB are reported, as found in three metal-working companies. Management, it was found, could be a major determining factor in the absentee problem and in instances the management factor can be an actual cause of absenteeism. A new statistical approach to this problem was developed and a possible method of forecasting the trend of absenteeism was suggested. While the study was made in non-textile plants, the same broad principles governing absenteeism will apply to practically all textile mills.

### Wartime Lighting Handbook

**LIGHTING HANDBOOK; Westinghouse Lamp Div., Westinghouse Electric & Mfg. Co., Bloomfield, N. J.; $1.00.**

A practical guide and working reference book for lighting engineers, designers, architects and builders, is represented by this 175-page book on lighting. A feature of the handbook is a series of charts which coordinate room index, fixture efficiency and coefficient of utilization curves and provide a new and graphic method of determining the desired illumination for various applications. Charts cover industrial and commercial fluorescent and incandescent lighting and provide a means of calculating quickly the number and size of lamps needed with practically every type of lighting fixture.

This book, while originally scheduled for release after the war, has now been made available because of the demand for information on wartime lighting.

### The Operating Executives Library

**THE TEXTILE RECORDER YEARBOOK, 1942–43; Harlequin Press, Old Colony House, South King St., Manchester 2, England; 10 shillings 6 pence.**

This is the third wartime issue of the Textile Recorder Yearbook and despite the difficulties under which it was edited and revised, its contents have been brought up to date. Ten sections comprise this book, covering cotton, woolen and worsted, rayon, silk, flax and linen, jute, hosiery and knitting, textile testing power transmission, and a miscellaneous section including humidification, patents, etc. Added to the miscellaneous section is a summary of orders covering control of the textile industry during the war.

# GATEWAY TO PROGRESS

In early times, the Old Fort at Niagara was a strategic portal to the vast unexplored West. Scene of many historic episodes, this outpost was a landmark in man's pioneering quest for a new and better world.

Yet the modern Niagara area is an even greater tribute to the efforts of the pioneers. For it is today one of the great industrial areas of the world. Built up by later generations of pioneers in manufacturing and hydro-electric power derived from the Falls, it is the source of tremendous quantities of chemicals and other important materials with which the America of today is defending the freedom of men throughout the world. As a leading chemical manufacturer in this area, Niagara Alkali Company is using all of its long and valuable experience and modern production facilities to increase the volume and improve the quality of such vital materials.

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*Essential Part Of America's Great Chemical Enterprise*

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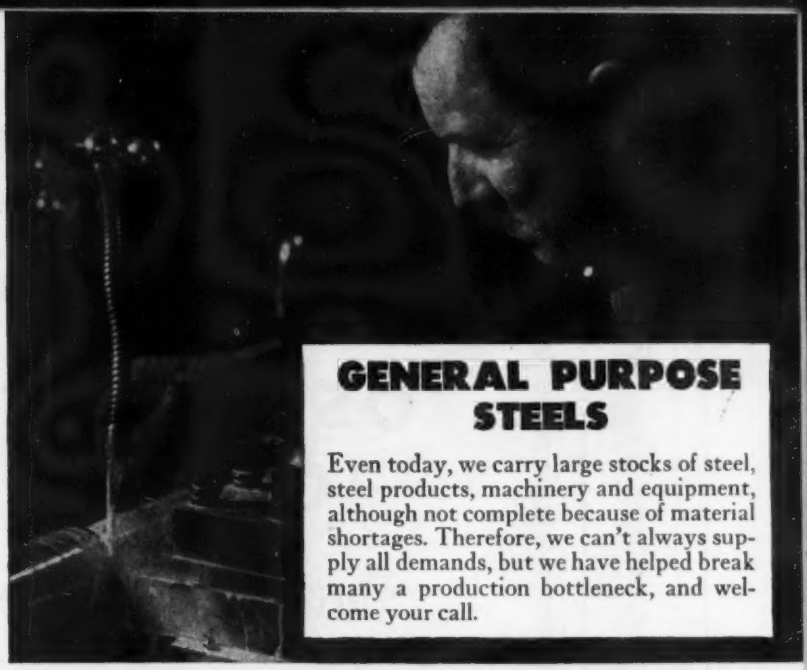
**Niagara ALKALI COMPANY**

60 EAST 42nd STREET, NEW YORK 17, N. Y.

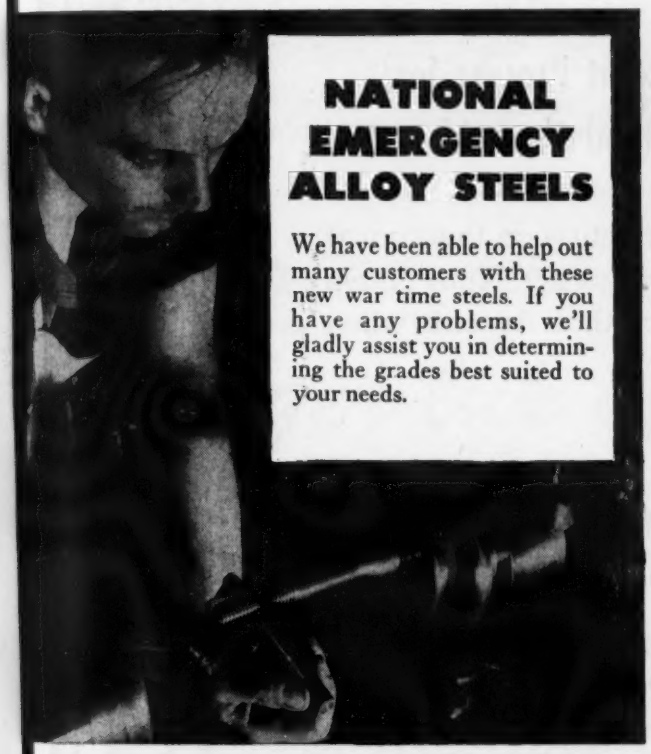
# LOOKING FOR STEEL?

A call to us may solve your problem. Our job is to keep war production moving, so if you need steel, we'll get it to you in a hurry, if at all possible—subject, of course, to priority regulations. We will appreciate receiving your inquiries—phone, write or wire our nearest warehouse. You'll get prompt, courteous attention.



## GENERAL PURPOSE STEELS

Even today, we carry large stocks of steel, steel products, machinery and equipment, although not complete because of material shortages. Therefore, we can't always supply all demands, but we have helped break many a production bottleneck, and welcome your call.



## NATIONAL EMERGENCY ALLOY STEELS

We have been able to help out many customers with these new war time steels. If you have any problems, we'll gladly assist you in determining the grades best suited to your needs.

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We can supply Welding Wire for electric arc welding, such as:

**STAINLESS STEEL ELECTRODES**
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We also offer Welding Machines, Protect-O-Metal for elimination of weld spatter and Havens "C" Protected Clamps. Write, phone or wire our nearest warehouse.

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*(for over forty years)*

### Our R/50 Special Avconit Process for high twist Rayons has stood the acid test.

Leading manufacturers are insisting on their yarns being processed the Avconit way. They have found from actual experience that Avconit when properly applied means

*Increased production*
*Lower percentage of seconds*
*Less press-offs and waste*
*Better satisfied knitters.*

We take great pride in the fact that we were pioneers in the development of Avconit Processing for high twist rayon yarns for hosiery.

For most satisfactory results in both knitting and finishing we recommend our R/50 Special Avconit Process.

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# *Wofor klos bilong jufela solger luk all-same bush?*

The South Sea native asks . . . in Pidgin English . . . "Why do your uniforms look like the jungle?"

Jungle uniforms worn by our boys mask their visibility against the tropical background and protect them from such hazards as malarial mosquitoes, poisonous thorn scratches . . . and just Japs.

We are proud that Stein-Hall sizing, finishing and printing materials are helping the Textile Industry to supply uniforms which make our fighting forces the best and most safely dressed in the world.

In spite of heavy war demands on our manpower, supplies and facilities, we shall strive faithfully to render you the same high degree of service as customary in peace times. If we fall short occasionally, we ask your indulgence.

And don't forget... *"Bayim mor faitim bonds!"* You can translate that one yourself.

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*If you'd like an original suitable-for-framing print of Brussel-Smith's wood engraving (top), drop a line to Stein-Hall.*

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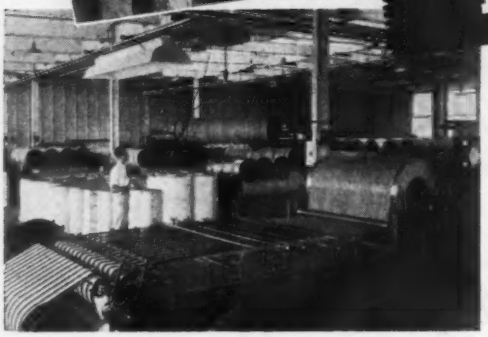
*Inexpensive hoist and track provides low cost handling and storage.*

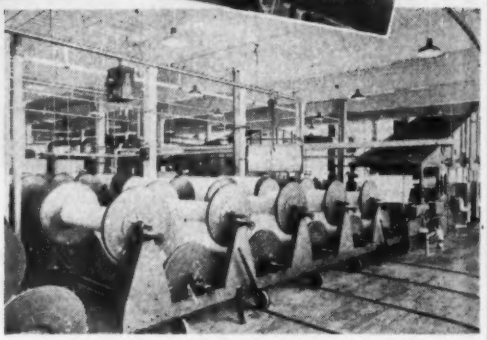
*3 ton hoist unit with Mono-Tractor handles loads from kiers throughout entire dye house.*

# AMERICAN MONORAIL *in* Textile Mills

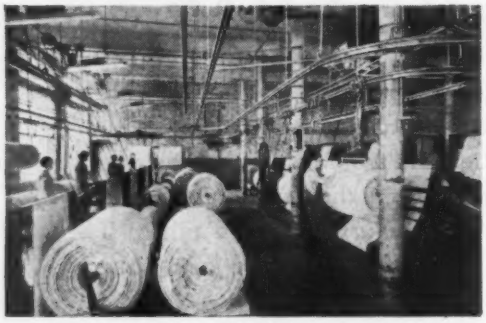


*Hand operated crane with electric hoist covers beam storage area for serving slashers.*

## *Simple Method for* STEPPING *up Production*

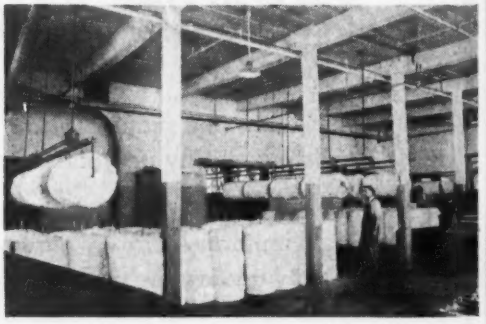


*Chain hoist loads creel which is rolled into position to keep slasher in full production.*



*Special carriers loaded by hoist on auxiliary track transfer rolls from finishing to inspection.*

AN American MonoRail Engineer will gladly show you how it can be done in your mill. Write today.



*Carrier handles four laps on tracks extending throughout the card room.*

*Overhead handling of warps and rolls permits compact arrangement.*

*Hand pushed crane with electric hoist completes the operation of package dye house.*

## THE AMERICAN MONORAIL CO.

13108 Athens Avenue ★ Cleveland, Ohio

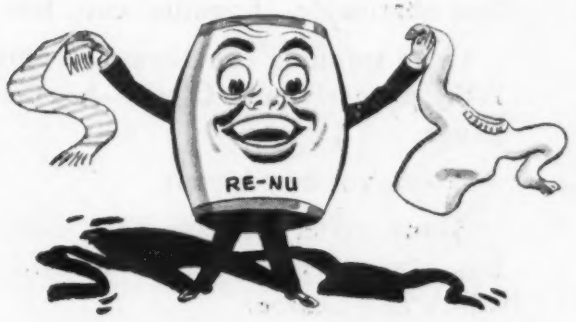
ARMOUR SUGGESTS

# Ways to pick soap for a specific wet-finishing need!

**1.** **Fulling of Worsteds and Woolens.** Because of the increasing use of shoddy wools, it is best to choose a low-titered soap. Armour's *Certified* is recommended because of its quick penetration and rinsability. *Certified* is a vegetable fatty acid base soap of medium low titer, available in flakes or solid form.

**2.** **Cotton and Rayon Cloth Scouring.** When scouring follows the bleaching and rinse, it is usually done at about 180°-190° F. And this calls for a good high titer soap such as Armour's *Flint*. Available in either chip or powder form, *Flint* is guaranteed to give top performance at high temperatures. For *Flint's* titer of 41°-42° C. is proved... before you buy... in Armour's pilot plant.

**3.** **Raw Wool Scouring.** An economical, low-titer soap is best for raw wool scouring because the temperature of the multiple scouring bowls is usually kept around 115° F. Armour's *Re-Nu* is an excellent soap for this process because it rinses quickly and thoroughly in warm water. *Re-Nu* is a thrifty potash soap in jelly form.




**There's an Armour Soap for Every Wet-Finishing Need!**

You can select from many Armour textile soaps . . . each built to satisfy completely a particular wet-finishing need. And you can depend upon top performance from *any* Armour soap . . . for they're all made from carefully-selected raw materials and are rigidly controlled during manufacture.

**If your order is delayed . . .** we know you'll understand that it is not always possible to produce *all* the soap that's needed *all* the time . . . under wartime conditions.

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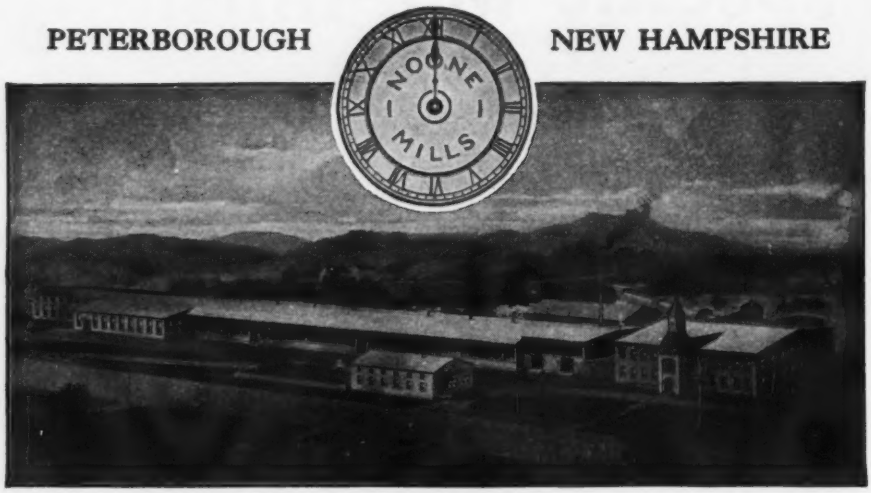


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Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and Leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

**Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.**

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

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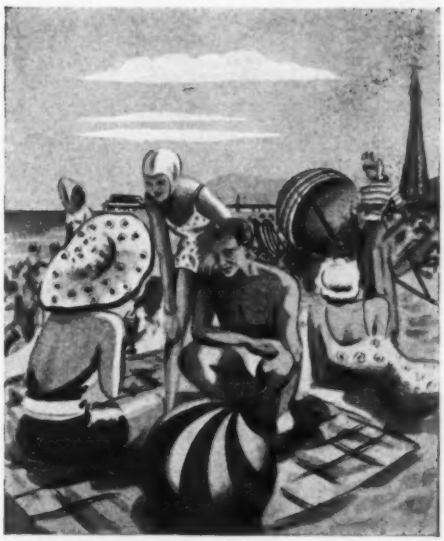
Your machinery, will have endured the continuous strain of war production. Naturally, you will desire that it shall be made adequate to fulfil the increased demands for clothing of all kinds.

As makers of machinery for the production of Worsted Yarns on both the English and Continental Systems, we shall be ready to put your plant in perfect order and so ensure maximum quality and quantity in post-war output.



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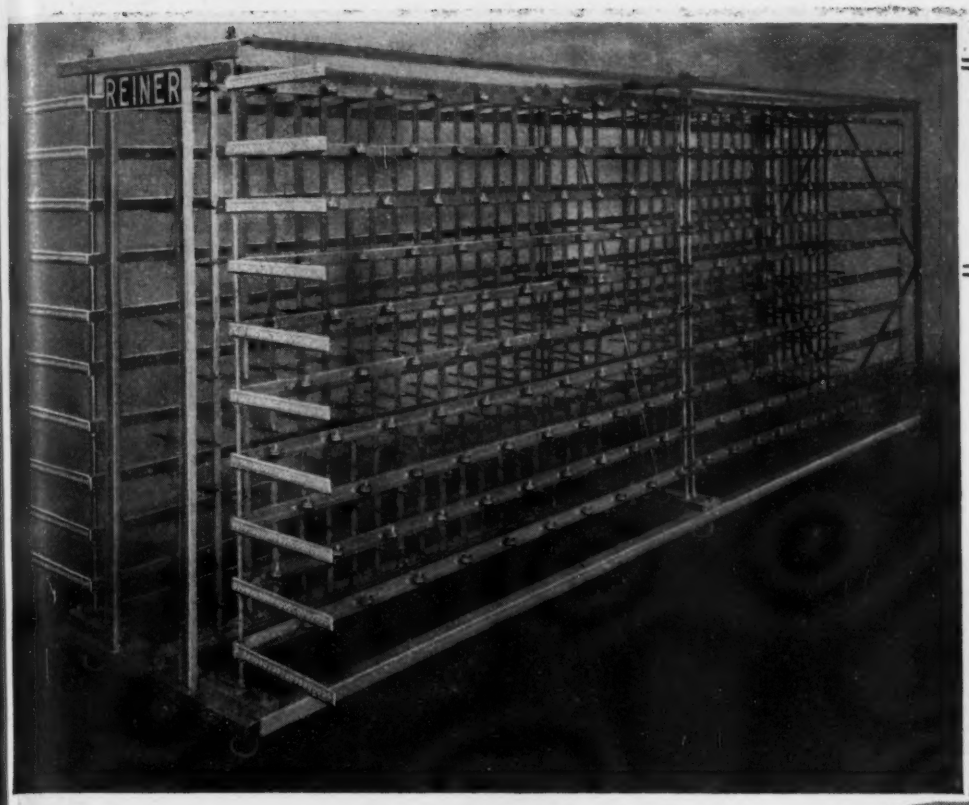
Eleven sound motion pictures, wall charts, instruction cards, many books of engineering and metallurgical data; all designed to help speed the war effort. This material is described in Alcoa's 1944 catalog of how-to-do-it helps. A detailed description of each item is included along with instructions for borrowing the films. Write for your copy today. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Bldg., Pittsburgh, Penna.




**We carry an ample reserve supply of replacement parts for all REINER equipment now in textile mill operation.**

# JACK CREEL

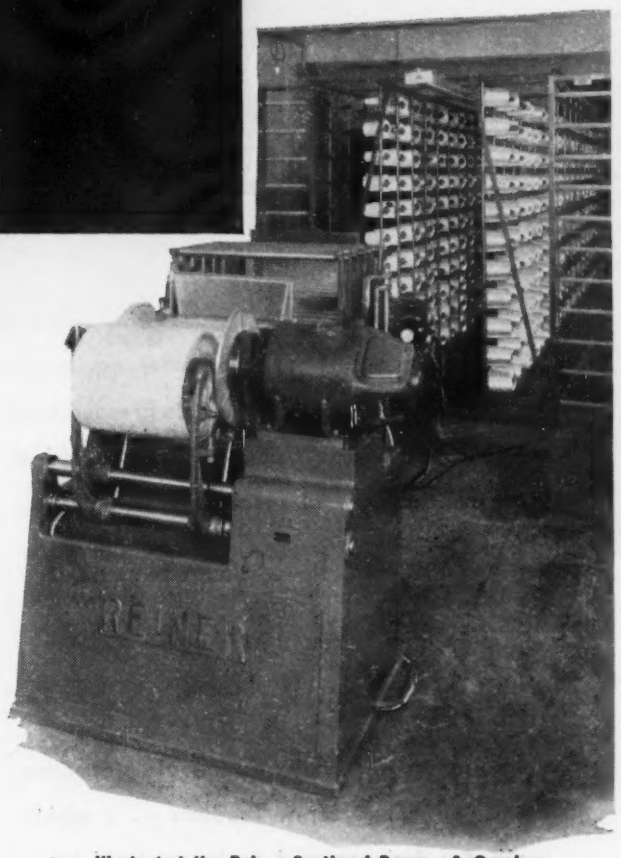
***400 End—About 16 ft. long by 5 ft. wide by 7 ft. high***

## CREELS BUILT IN SECTIONS AND IN ANY LENGTH

This small unit allows drawoff over end for cotton, woolen, worsted and rayons from either paper or wooden cones (8.25 cone pitch) or spools.

The Jack Creel is built 10 cones high staggered. It is equipped with heavy duty spindles, special cone holders, chrome plated Disc Tensions, porcelain eyelets in the front frame and with or without electrical stop motion. Mounted on casters, the Jack Creel is easily movable.

We are in a position to build warpers and creels subject to priority rating. Write for more complete information.




**Illustrated the Reiner Sectional Beamer & Creel.**

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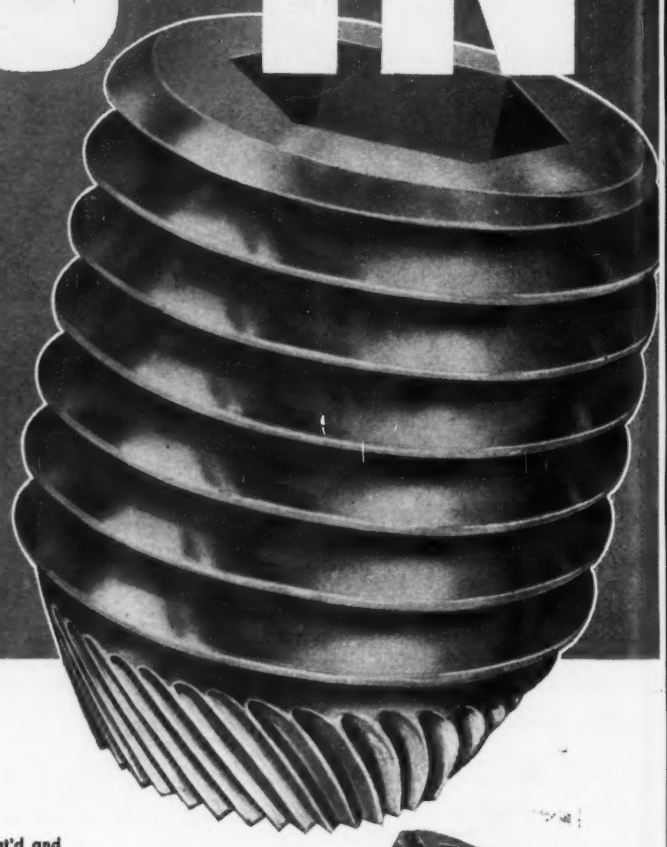
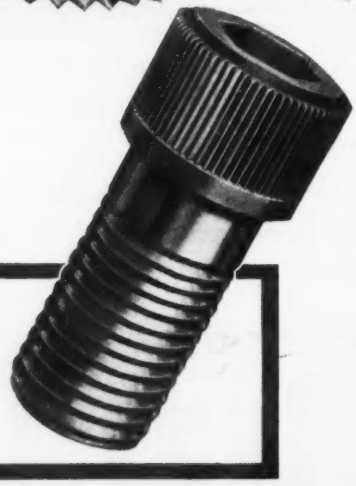
When designing machines or other equipment requiring set screws take the simple precaution of specifying "Unbrako" Self-Lockers because when they are tightened as usual, the knurled points dig in and hold the screws tight in spite of vibration or jarring. They're easily removed, though, with a wrench and can be used again and again. Sizes from No. 4 to 1½" diameter.



Pat'd and Pat's Pending

Our "Unbrako" Catalog is full of information about "Unbrako" Screw Products . . . mighty handy for designers and engineers. Send for a free copy today.



**KNURLED SOCKET HEAD CAP SCREWS**

Speed the job! Because the knurled head prevents the fingers, handiest of wrenches, from slipping and wasting time. Knurling also permits locking after countersinking, yet screw can be removed with a wrench and used again and again. Sizes: No. 4 to 1½" diameter.

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# Here's what you should know about

# EASIER LIGHTING MAINTENANCE

SEVEN STEPS to Proper LIGHTING MAINTENANCE
G-E MAZDA LAMPS
GENERAL ELECTRIC
TABLE OF CONTENTS
The Seven Steps to Proper Maintenance . . . . . 3-5
Recommendations for Stocks of Lighting Parts . . . . . 6-7
Labor-Saving Maintenance Devices . . . . . 8-11
A Check List for Fluorescent Equipment . . . . . 12-13
Some Facts About Lamps . . . . . 14-15

*New 16-page G-E Manual—All Latest Information*

NEVER before have so many useful facts and features on lighting maintenance been put together so compactly and conveniently in one 16-page manual.

"Seven Steps to Proper Lighting Maintenance" covers the subject briefly, clearly and from a practical viewpoint. Here's the information you'd like to have on lighting maintenance, and labor-saving maintenance devices, plus a special tabulated quick-reference check list on fluorescent maintenance.

There's another feature you'll like—a guide to stocks of lighting parts . . . telling you what stocks you should have in your plant. No fuss and bother . . . no waiting . . . when you need replacement parts!

*Hear the General Electric radio programs: "The G-E All-Girl Orchestra," Sunday, 10 p.m. EWT, NBC; "The World Today," news every weekday, 6:45 p.m. EWT, CBS.*

**G-E MAZDA LAMPS**

**GENERAL ELECTRIC**

*"TO MAKE LAMPS STAY BRIGHTER LONGER"*
*The Creed of G-E RESEARCH*

**MAIL THE COUPON BELOW FOR YOUR FREE COPY TODAY!**

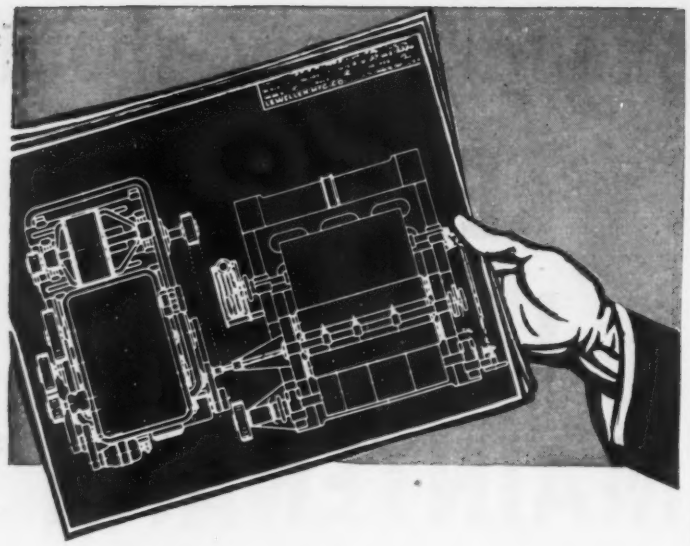
Dept. 166-TW-B
Nela Park, Cleveland 12, O.
Gentlemen:
Please send a copy of your new booklet, "Seven Steps to Proper Lighting Maintenance," to:

*Name* .....

*Street Address* .....

*City and State* .....

**LET'S ALL BACK THE ATTACK—BUY MORE WAR BONDS**



Providing

# *Dependable*

## solutions to speed-control problems is our business

● Have you consulted the *pioneer* in speed-control engineering? Maybe it's time to take a fresh look—time to get a really dependable answer to your speed-control problem.

*Transform your machines with perfect, flexible speed control over a wide work range and you have the key to efficient, modernized production. Apply Lewellen Controlling Devices for amazing results.*

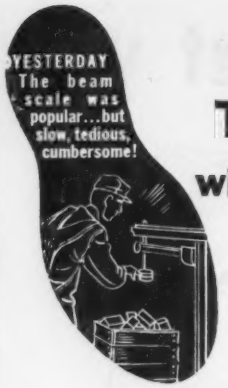
The ability to provide a solution to any type speed-control problem is yours for the asking. May we help you NOW with your vital manufacturing machines or with ones you may be adapting or designing for post-war use? Draw on the experience of the Lewellen organization where speed control has been their only endeavor for more than 45 years. *Wire, phone or write!*

LEWELLEN MANUFACTURING CO., *Columbus, Ind.*

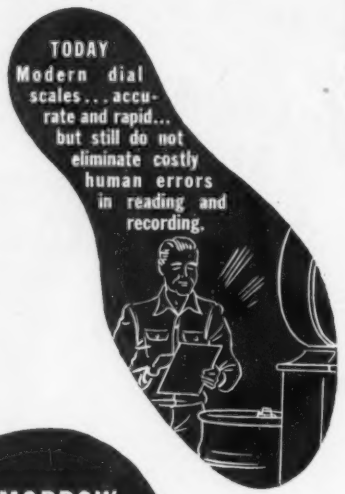
# LEWELLEN

*Variable Speed* { TRANSMISSIONS MOTOR PULLEYS

★ Lewellen knows speed control

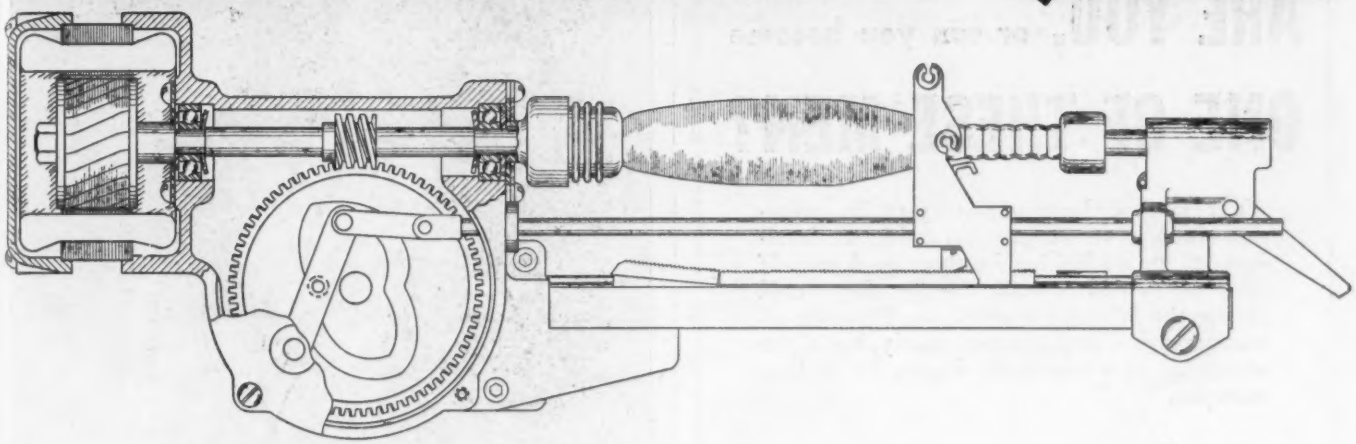

## STEP INTO TOMORROW with your WEIGHING



TOMORROW
PRINTED Weight Records will be the accepted practice. The Toledo Printweigh, now serving in hundreds of war plants, will give you new accuracy in your weight-control.
Toledo Scale Co., Toledo, Ohio
TOLEDO
NO SPRINGS
HONEST WEIGHT
PRINTWEIGH

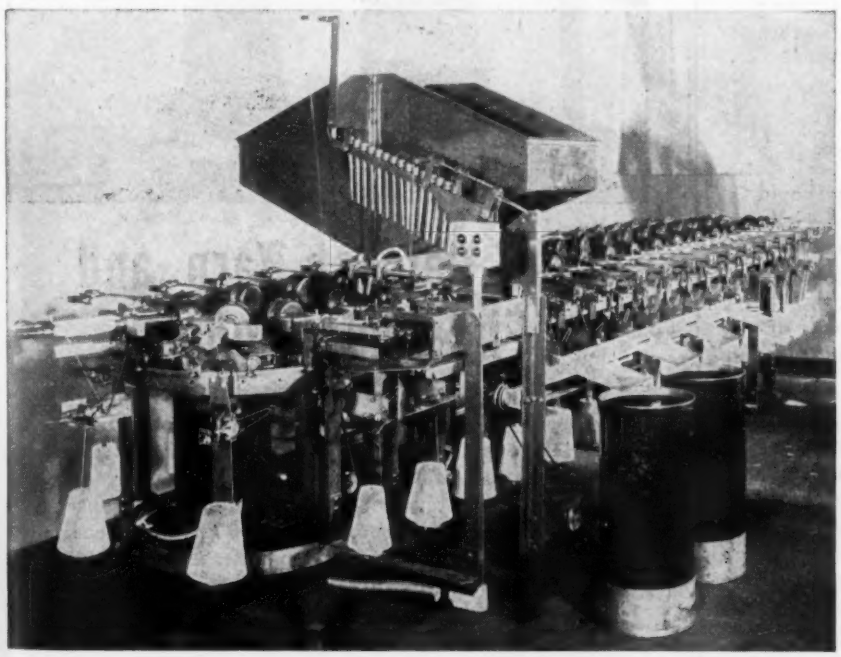
**TOLEDO PRINTWEIGH SCALES**

# ABBOTT AUTOMATIC QUILLER



**All there is to the winding units:—**

A low voltage three phase motor drives the spindle directly
Double throw cam gives overlapping layers of wind
Diameter and shape of bobbin easily and accurately controlled by a feeler working against a stationary rack
Detectors stop motor when bobbin is full or when thread breaks
Spindle speeds up to 5000 RPM
Winds cotton, worsted, woolen, silk, rayon, etc.
Bunch is controlled by making one adjustment instead of adjusting all winding units.



Low investment cost due to simple construction, and use of ONE automatic head to serve all spindles.

Low labor cost due to feeding bobbins from a large central supply.

# ABBOTT MACHINE COMPANY

**WILTON, N. H.**

***Southern Representative, L. S. Ligon, Greenville, S. C.***

# ARE YOU, or can you become ONE OF THESE MEN?

We are large producers of rayon yarn. In connection with our current operation and future development, we are looking for three good men. If these men could be made-to-order they would answer the following descriptions. Probably no one meets these requirements exactly, but if you match up to a reasonable degree, let us hear from you.

**Man #1** A Weaving Mill Service Man.

He should be a graduate of a technical or general college, with 6 years or more practical weaving mill experience. Ideally, he would be between 30 and 40, and prepared to do field service work for us among weavers and throwsters.

**Man #2** A Weaving Yarn Trouble-shooter.

This man should be under 40, should have a scientific background and education in chemistry and/or physics. He should have had practical laboratory experience in connection with problems in woven goods. We'll give the right man the necessary rayon training for him to become a laboratory anchor for our field investigations.

**Man #3** A New Products Man.

The ideal man for this opening should have a scientific background, especially in chemistry. He should be about 35 or 40 and have had specific experience in textiles, especially crepe yarns and fabrics. Some knowledge of textile designing would be a very desirable plus.

If you are, or believe you could become, one of these men, write to us, giving all pertinent information—personal facts, education, experience, and an idea of the salary you would expect. Even if you're currently engaged in necessary war work, let us hear from you—we are as interested in futures as you are. We will hold your communication in strictest confidence. If your letter suggests a likelihood of getting together, a personal interview will be arranged at your convenience.

Address your letter to the Vice President and Merchandise Manager, Dept. A.

**INDUSTRIAL RAYON CORPORATION**

*New York Office:* 500 Fifth Ave., New York 18, N. Y.

# For Perfect Yarn and Finished Goods...

Wissco Card and Napper Clothing produce results that help you get finished fabrics of top quality. Made of special steels, the staples are clean-cut, precision ground for keen penetration, and checked under a microscope. Available in all standard foundations and Wissco Special Foundation which permits up to 200 lbs. more tension and assures positive pitch, long life. Glass hardened points, too. Write for literature. Wickwire Spencer Steel Co., 500 Fifth Ave., New York 18, N. Y. Buffalo, Chicago, San Francisco, Worcester.

*Wissco*

**CARD AND NAPPER CLOTHING**

for wool, worsted, cotton, silk, asbestos and specialties

# COTTON IS A JUNGLE FIGHTER TOO

**On the islands of the Southwest Pacific, cotton comprises much of the most essential equipment of the American Infantrymen who are making the Japs rue Pearl Harbor.**

**Some of this equipment can be seen in this actual photo showing our boys fording a stream on one of these islands in their advance on Nipponese positions. Most of their clothing is made of cotton, as is the web belting on which their cotton gas mask carriers, rifle ammunition, packs, etc. are slung. Leggings, underclothing, helmet bands are also made of cotton.**

DURENE 2-ply Mercerized Cotton Yarn — COMETCORD 4-ply Mercerized Cotton Yarn for 6 x 3 Lines—S-P-Y, the Moisture Resistant Mercerized Yarn—NEOPHIL Nylon Thread for Seaming—Looping Nylon Hosiery—PREFERRED BRAND Seaming & Looping Thread—ENTWIST Mercerized Cotton Yarn and Nylon Twisted Combination—WEARTWIST, the Domestic Mercerized Lisle—DYED YARNS

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123 South Broad Street, Philadelphia 9, Pa.
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ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
*Representatives in principal textile centers of the world*

ESTABLISHED 1883

*aberfoyle*

AMERICA'S OLDEST MERCERIZERS OF FINE COTTON **YARNS**

# ON SERVICING

## BOYCE
# WEAVER'S KNOTTER

Your Boyce Knotter is built like a fine shock-proof watch.

Only an expert can repair it properly.

Our Perfected Knotter Service Department loans service knotters while rebuilding worn knotters—and operates a trade-in and replacement service. . . . New, standard replacement parts are available, but new parts do not always fit a worn knotter. For any but minor repairs, use BOYCE SERVICE—designed to maintain long life efficiency of your knotter at minimum cost.

**MILL DEVICES COMPANY**
DIVISION OF
A. B. CARTER, INC.
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# DAVIS AND FURBER

## GOOD PLACES TO START

**Carding and Spinning departments are good places to begin post-war modernization, because here Davis & Furber equipment offers quick results with a comparatively small investment.**

**With new cards and spinning frames, upkeep will be negligible and the number of spindles required for a given production will be greatly reduced — resulting in important labor savings.**

***Claim Your Place On the List for New Cards and SIMPLEX Spinning Frames to be Built After the War is Ended.***

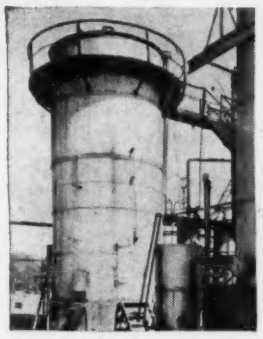
**Plan Post War Improvements Now**

# DAVIS & FURBER
NORTH ANDOVER, MASS.

**Specializing on Essential Parts for Repairs and Maintenance, Card Clothing, Napper Clothing, Garnett Wire, Leather Rubb Aprons and Condenser Tapes Till This War Job Is Done.**

# TELLURIUM LEAD DATA SHEET

SUBJECT: *Acid-Equipment Vibration*



**Tellurium Lead resists vibration:** In chemical handling equipment subject to vibration, the stresses resulting from the continuous, alternating movement may result in failure of the materials from which the equipment is made.

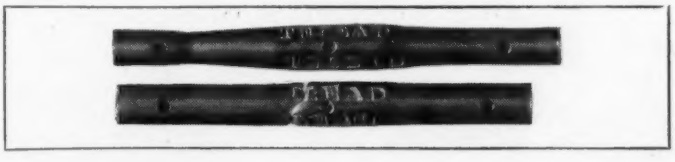
This breakdown may take the form of a crack in a tank lining or a leak in a heating coil or pipe line.

The service records of users whose statements are in our files show that in a number of instances Tellurium Lead sheet and pipe have given better service under such vibratory conditions than the materials which were previously used.

**Higher endurance limit:** This improved vibration resistance was borne out by a simple laboratory test in a Haigh "fatigue" testing machine. Loads were applied to test strips of lead which were subjected to rapid, repeated stresses simulating vibration. Nearly twice the load was required to fracture a Tellurium Lead specimen as a specimen of lead without tellurium. Among technologists Tellurium Lead's higher "endurance limit" is generally accepted as a measure of its resistance to vibration failure.

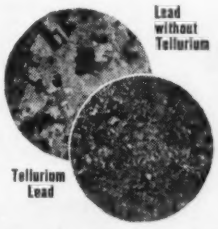
☆ ☆ ☆

**Tellurium Lead's** greater resistance to vibration, as well as its generally superior performance under heat changes, elevated temperatures and stress-corrosion, is believed to result from a combination of the characteristics enumerated below, which distinguish it from lead without tellurium.



**1. Strengthens under stress:** Tellurium Lead has the ability to "work-harden." Physical stress actually increases its tensile strength and makes it more fracture-resistant than before. For example, these pipes of Tellurium Lead (top) and lead without tellurium (bottom) were stamped with their respective names and pulled out at equal rates in a tensile testing machine. Note how the Tellurium Lead was toughened by the stamping, how it work-hardened and developed strength, whereas the lead without tellurium was weakened—and fractured.

**2. More uniform grain structure:** Undoubtedly another factor is Tellurium Lead's generally more uniform and finer grain structure as shown in photomicrographs at right. As a result, its surface is smoother—there is less possibility of pitting and local corrosion.




**3. Higher recrystallization temperature:** Another result of the addition of tellurium to lead is a raising of the recrystallization temperature.

Ordinary lead recrystallizes below room temperature. For this reason the hardness developed in lead by cold "working" is not retained. The grain structure produced by working is not permanent since, as soon as the working ceases, the grains "grow."

Tellurium Lead recrystallizes at more than 200° F. It thus retains the hardness developed by working and the grains of Tellurium Lead do not begin to "grow" until a relatively high temperature is reached. In laboratory tests, extruded strips of Tellurium Lead, annealed at 150° C. for six months, showed no grain enlargement. This freedom from grain growth at temperatures up to 200° F. is believed to be beneficial both from the standpoint of corrosion resistance and physical strength.

☆ ☆

**Where it is used:** Tellurium Lead is widely used in contact with sulfuric acid and sulfates, phosphoric acid and chromic acid. It may also be used in contact with pickling, electroplating and other corrosive solutions.

Among the types of chemical operations in which Tellurium Lead is employed are: chlorinations, reaction chambers, reductions, pickling, sulfonations.

Typical installations include: agitators, aprons, drums, ducts, fans, flooring, heat exchangers, heating and cooling coils, kettles, pans, stills, sulfuric acid chambers, table tops, tanks, vats.

☆

**How it is applied:** Tellurium Lead may be bent, seamed, flanged, burned, in the same manner as chemical lead.

## *WHAT USERS REPORT:*

"We have installed a number of tank linings using Tellurium Lead. It has been very satisfactory in cases of hot liquor and agitation where in the past some of the upright seams have cracked."

• • •

**"Tellurium Lead is used in our chlorinators for bond-coating steel agitators, thermometer wells, chlorine inlet spouts, etc., and is exposed to relatively low concentrations of chlorine and hydrochloric acid gases at 50-75° C. Its rate of corrosion is about half that of ordinary lead."**

• • •

"We highly recommend Tellurium Lead for heating and cooling coils. It has also been giving very good service in agitators, saturators, pickling and etching tanks."


## TELLURIUM LEAD

**What it is:** Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It gives the advantages of this well-known chemical lead plus important new ones.

**Available forms:** Tellurium Lead is available in sheet or pipe form or fabricated in coils for heating and cooling purposes.

**For further information** or advice regarding the use of Tellurium Lead, write:

**NATIONAL LEAD COMPANY**—New York 6, Baltimore 3, Buffalo 3, Chicago 80, Cleveland 13, Cincinnati 3, St. Louis 1. National-Boston Lead Co., Boston 6; John T. Lewis & Bros. Co., Philadelphia 7; National Lead & Oil Co. of Penna., Pittsburgh 12; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis 6; Master Metals, Inc., Cleveland 13; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

THERE'S A

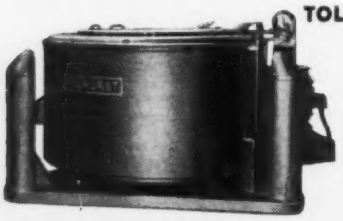
# TOLHURST

FOR EVERY TYPE OF

## TEXTILE EXTRACTION

**TOLHURSTS** have proven themselves time and again the fastest, most efficient extractors in the textile field. For every need, for every material, the right Tolhurst will do it better and faster.

**TOLHURST "SUPREX"**—For cotton raw stock this 48″ extractor has proven its worth, in speed of extraction, economy and production. Smooth, efficient operation is assured by "SUPREX" suspension principle. Higher rotational speeds mean quicker and greater extraction. Timer control eliminates guessing when load is finished.



**TOLHURST "CENTER-SLUNG"**
Every feature of the "CENTER-SLUNG" has been designed to produce greater volume in shorter time. Unexcelled for underwear, tubing, hosiery and other fabrics. The exclusive center-of-gravity basket suspension enables this machine to handle unbalanced loads and assures smooth operation. Available in 40″, 48″ 60″, 72″ basket sizes.

**TOLHURST "SOLID CURB"**
Designed for rapid handling of small loads, the Tolhurst "SOLID CURB" Extractor is ideal for yarn, hosiery and other textiles. Motor drive. Basket sizes 20″ and 30″

*Write for detailed literature*

ARMY E NAVY

**Tolhurst CENTRIFUGAL DIVISION**

**AMERICAN MACHINE AND METALS, INC.**
**EAST MOLINE, ILLINOIS**



"FAIRBANKS-MORSE SCALES—ARBITERS OF BUSINESS"

# The Decision Is Final!

Today, many industries are effecting substantial savings with Fairbanks-Morse Scales equipped with Printomatics that print weight records—eliminate errors—simplify bookkeeping and inventories.

Since 1830—Fairbanks-Morse Scales have been rendering split-second decisions recognized as *fair* and *absolute* by buyers and sellers alike. They know that the accuracy and long life built into Fairbanks-Morse Scales give added protection—definite *plus values*—wherever fast, accurate, efficient weighing is essential.

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Buy War Bonds

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Scales

# AS WE SEE IT NOW

The Charles H. Johnson Machine Works is still engaged in production of essentials of war. It is impossible to tell for how long this will continue necessary—but not long, we hope.

Many of our regular customers are in need of our slashers, some of them to increase production, others to replace obsolete or worn out machines. To those holding high priorities, we have been able to deliver machines and needed parts.

Fortunately the war work we have assumed is similar to our peace-time work. Machines and skills remain available for rapid return to our normal peace-time production. As soon as the "green light" flashes we can begin to fulfill the many orders now in suspense for the duration. We will be in excellent position to take care of the sizer requirements of the industry.

(Signed) William Johnson

**Charles B. Johnson**
**MACHINE WORKS**

**PATERSON** **NEW JERSEY**

# . . . in many a girl's heart today

. . . is the determination to help her country in its hour of need. . . . and America salutes them. In their service uniforms many of the Fibres and Fabrics are treated with *DuraBeau* Finishes . . . helping to give them that smart appearance, and assuring them of long, serviceable wear.

*DuraBeau* Finishes impart the "film of protection," . . . and they are tailored to fit the fabric.

DuraBeau finishes
Reg. U. S. A. and Canada

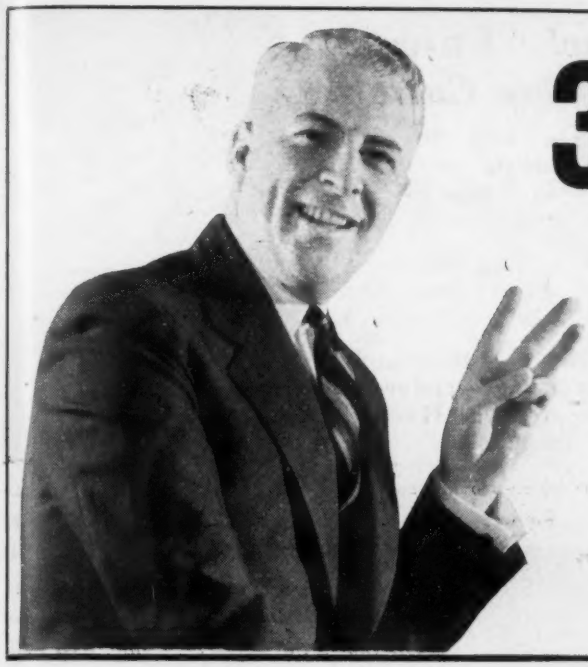
SCHOLLER BROS., INC., Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila., 34, Pa. • St. Catharines, Ont., Can.

# Where Trade Orders Meet*

# *NEW YORK COTTON EXCHANGE

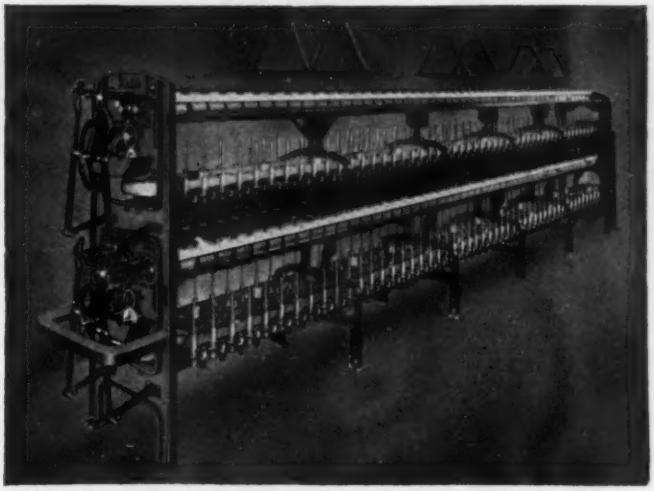
*Established 1870*

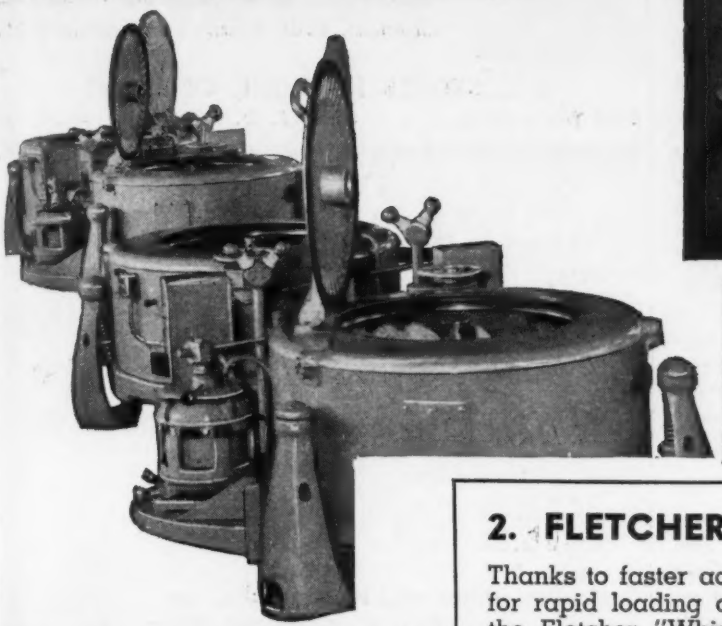
**the vital medium for cotton distribution**



# 3-WAY PLAN

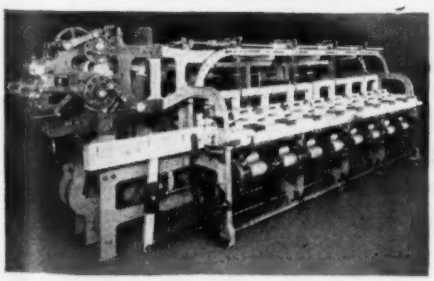
## FOR INCREASING PRODUCTION WITH A MINIMUM OF EQUIPMENT





### 1. FLETCHER "APEX" TWISTER

Individual spindle adjustment affords uniform spindle speed. "Oilwell" spindles contain a year's supply of cool, clean oil and eliminate slow-ups due to dirty or sticky spindles.



### 2. FLETCHER "WHIRLWIND" EXTRACTOR

Thanks to faster acceleration and operation, easy accessibility for rapid loading and unloading, and large capacity baskets, the Fletcher "Whirlwind" has established a new production high in the textile industry. Yet this extra speed is achieved at no sacrifice of safety or any of the other factors essential to efficient performance.

Multiple V-Belt Drive affords convenient, safe control. Effective self-balancing arrangement insures stability even with loads badly out of balance. Brake can be easily removed for relining without taking the machine apart. Finger Tip Control promotes operative contentment.

### 3. FLETCHER "VICTORY" LOOM

Built to handle mass production of webbing for war, this loom has more than stood the test. Twenty-four hours a day, seven days a week, in mills all over the country, it's on the job producing quality webbing for our armed forces, — enough, — on time, — and up to rigid specifications.

These and other Fletcher products that can help you NOW AND AFTER VICTORY are fully described in illustrated catalogs. We'll be glad to send you these and keep you informed of new Fletcher developments. Just write—there's no obligation.

**FLETCHER**

FLETCHER WORKS - GLENWOOD AVE. & SECOND ST.
PHILADELPHIA 40, PENNA.

# ONE TEXTILE MAN SAID:

## "You can't tell me a thing about Ring Travelers"

**PERFECT BALANCE**
Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

**THE NE-BOW**
Prevents yarn ends flying out, provides ample head-room for threading—prevents binding on ring. Note "bend inward" at top of horn.

**HEAT CONTROL**
for better metal—dominates "U. S." production! Carburizing and tempering ovens are electrically controlled through pyrometers — for better performance.

**THE BEVEL EDGE**
Great pioneering "U. S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."

Maybe we ought to congratulate the man who doesn't want to hear anything about ring travelers! Maybe he's got the exact travelers that suit his conditions and give the most yarn production with least trouble.

On the other hand, if you think your traveler performance *might* be improved, we'll gladly work it out with you, without placing you under the slightest obligation. Or if maybe a different type of ring traveler would get out more yarn with less trouble . . . we will design and manufacture exactly *that* traveler, and supply it in absolutely uniform lots, whether you order a few thousand or millions! We don't claim "U.S." will produce your perfect traveler "overnight"—but you'll GET IT.

In any event, why not let us send a real practical mill man—not just a salesman—up to your mill, without obligation to you. A man who's been an overseer and a super himself, run frames, knows what it's all about. We guarantee he will not waste your time or your money, but give SERVICE. A wire or a letter from you today gets prompt action.

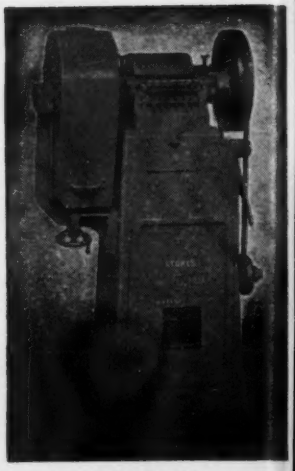
## U.S. RING TRAVELERS

● *Sold under these trade names*

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

**U.S. RING TRAVELER CO**
AMOS M. BOWEN
*President and Treasurer*
PROVIDENCE RHODE ISLAND

## *New! Universal Fibre Cutter*



• Makes 500 to 20,000 knife cuts per minute. Handles 4 to 8 tops or equivalent simultaneously.

• For cutting Rayon, Silk, Wool, Flax, Jute, Cotton, other Fibres—Wet or Dry.

• With 4 interchangeable cutter heads produces full range of fibres, from Flock to 8" length.

This is an improved machine, accurate, flexible, highly productive . . . for wet or dry cutting. Features include Self-sharpening Knives, Tension Release for Feed, Hand-wheel adjustments while operating, Ball Bearings, Balanced Heavy-duty Cutter Heads, Enclosed Motor, Clutch for quickly stopping feed rolls, Variable-speed drive synchronized with feed, and others. Fully described in Bulletin 42-FC.

**F. J. STOKES MACHINE COMPANY**
6004 Tabor Road Olney P. O. Phila. 20, Pa.

**F.J.Stokes** FJS Est. 1895

# STANDARD SILICATES

## KIER BOILING

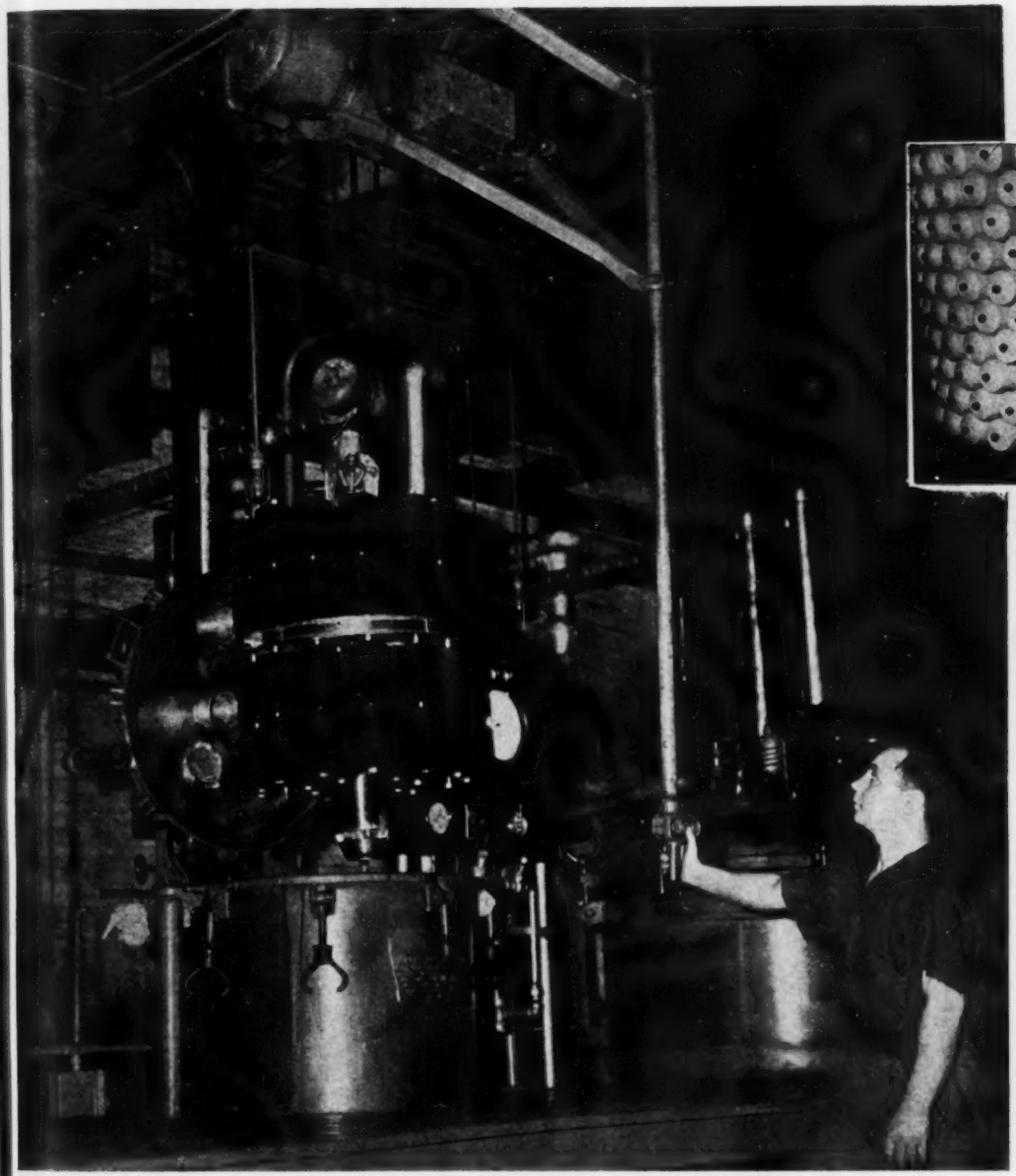
For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

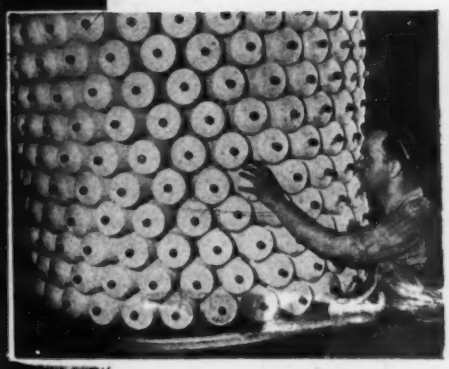
Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

ALKALI

**DIAMOND ALKALI COMPANY**
**STANDARD SILICATE DIVISION**
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y.
MARSEILLES, ILL. · DALLAS, TEXAS

# Equipped for Modern Package Dyeing





Globe's equipment for Package Dyeing includes machines of both large and small capacities, to secure the greatest economy for every Globe customer.

**BUY BONDS OF THE 4th WAR LOAN**

And make your dollars do double duty.

With its traditional thoroughness, Globe Dye Works provides for the modern process of package dyeing.

This is in addition to Globe's large facilities for yarn dyeing by other methods, which include modern skein and warp dyeing machines for cotton and synthetic yarns of all types.

**IN FUTURE, AS IN THE PAST,**
**"YOU CAN RELY ON GLOBE."**

Globe DYE WORKS CO.

1865 1944

**FRANKFORD, PHILA. 24.**

Photo Courtesy Pepperell Mfg. Co.

**More doffs per shift**

Greater production is the inevitable result of replacing worn equipment with rings of ultra-modern design and fine "DIAMOND" Finish. For full production, take full advantage of this repair item.

*We make all types of holders*

**WHITINSVILLE (MASS.)**

**SPINNING** DIAMOND FINISH **RING CO.**

*Makers of Spinning and Twister Rings since 1873*

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STANDARD WORSTED TOPS ★ STANDARD MOHAIR TOPS ★

**TOPS**

**FRANCIS WILLEY & CO.**

**300 SUMMER STREET**

**BOSTON, MASS.**

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**PEQUOT**

**SHEETS AND PILLOW CASES**

**We're working for UNCLE SAM as well as Mrs. American Housewife!**

**PEQUOT MILLS**

**Salem, Mass.**

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THOS. WOLSTENHOLME SONS & CO. INC.

3300 Frankford Avenue

Philadelphia, Pa.

**Yarns for all purposes**

French and English Spun Worsted
French Spun Zephyr
French Spun Merino

*Representatives:—*

Mr. Robert H. Perkins, 99 Chauncy St., Boston 11, Mass.
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Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, California

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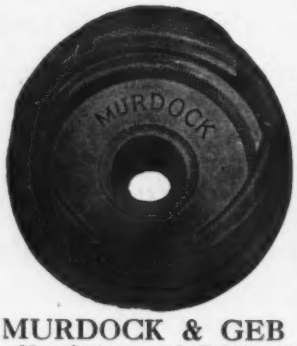
**MURDOCK Bobbin Holders**




***Two exclusive Features Affording Long Life:***

1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.

2. Holding wings held positively in position by skeleton washer—no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins. Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.

**Manufacturers of Bobbin Holders for Over Fifty Years**

# He Rates It!

With all the military insignia that's being awarded these days, how about the men who are doing a job of

## Better Carding

They rate this imaginary medal for long hours of close attention to their jobs and the fact that most of them know that Better Carding calls for

## BOOTH
### QUALITY CARD CLOTHING
52 YEARS OF SERVICE

**Benjamin Booth Company**
ALLEGHENY AVENUE and JANNEY STREET • PHILADELPHIA, PA.

## Stop Oil Raids on Loom Production

Dripping, leaking oil cuts down your Weave Room production of perfect goods. Oil spots on goods increase cost because extra labor is required for removal.

NON-FLUID OIL is d r i p - l e s s and waste-less. It stays off goods and insures high production at low cost by keeping machines running steadily at top speed. NON-FLUID OIL outlasts oil so reduces lubricant cost.

*Write for instructive bulletin*

**New York & New Jersey Lubricant Co.**
***Main Office:* 292 Madison Ave., New York, 17, N. Y.**
Southern Agent, Falls L. Thomason, Charlotte, N. C.
WAREHOUSES
Chicago, Ill. Providence, R. I. St. Louis, Mo. Detroit, Mich. Atlanta, Ga. Charlotte, N. C. Greenville, S. C.

TRADE MARK REGISTERED
**NON-FLUID OIL**
IN U.S. PAT OFFICE & FOREIGN COUNTRIES
MODERN TEXTILE LUBRICANT

*Better Lubrication at Less Cost per Month*

## Sterling Ring Travelers

**SUGGESTION**

Don't waste valuable time and metals by playing a lone hand. Call on us or our representatives for Traveler suggestions.

*Southern Representatives*
GEORGE W. WALKER
Box 1894 Greenville, S. C.
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Box 443 Spartanburg, S. C.
SOUTHWEST SUPPLY CO.
Box 87 Grandview, Texas

STERLING RING TRAVELER CO.
EAST RIVER, MASS.

## COTTON WARPS

**Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed**

Novelty yarns—of cotton, worsted, wool, mohair, rayon—in all fashionable combinations and effects and in many original effects. Write for samples.

*Sell Direct*

**Dana Warp Mills . . Westbrook, Maine**

STYLE 28

ROVING TRUCK

# LANE CANVAS TRUCKS

*For the well equipped mill*

**W. T. LANE & BROS., Inc.**
**Manufacturers, Poughkeepsie, N. Y.**

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# TISSUE TIPS by VICTORIA

**Specify VICTORIA TOILET TISSUES**

Single Fold, Double Fold or Black Core—for dependable quality.
Victoria Paper Mills Co., Fulton, N.Y. Craftsmen in paper-making since 1880.

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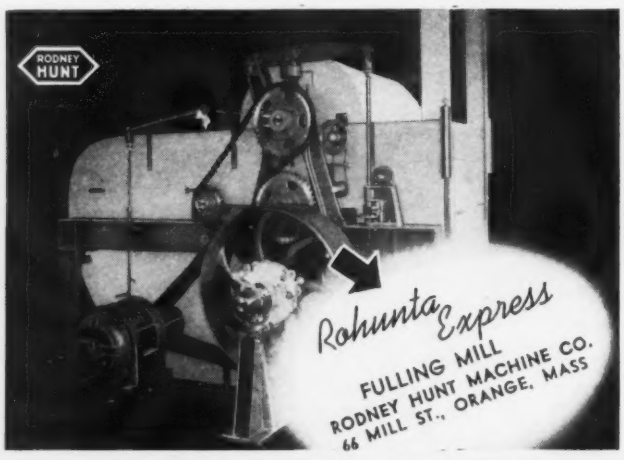


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# WE'VE LEARNED A LOT IN OUR 50 YEARS!

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

**W. E. CALDWELL CO.**
Incorporated
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS

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# ALL STEEL ECONOMY BALING PRESSES

ALL SIZES FOR ALL PURPOSES

*LARGEST LINE BUILT IN U.S.A.*

**ECONOMY BALER CO., DEPT. J ANN ARBOR, MICH., U.S.A.**

**REPRESENTATIVES:**

New York Office: 100 Gold St.
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Boston Office: 601 Atlantic Ave.

Other Sales and Service Branches in most Important Cities.

## THE OLDEST AND LARGEST

*Manufacturers of*

# RING SPINNING AND TWISTER TRAVELERS

**IN THE UNITED STATES**

**NATIONAL - ETARTNEP FINISH**
**A NEW CHEMICAL PROCESS**

**American • Hicks • Wilson**

**United States Standard**
**Wentworth Double Duty**
**and Gravity Travelers**

**MAKE STRONGER YARN**

Double Duty and Gravity Travelers embody a new heat-treating principle, reduce to the irreducible minimum the frictional contact between the Traveler and the Ring. The life and endurance of the Traveler is not only multiplied by two, and oftentimes to a greater degree, but the life of the spinning Ring is increased in relative proportion to the lessened frictional load.

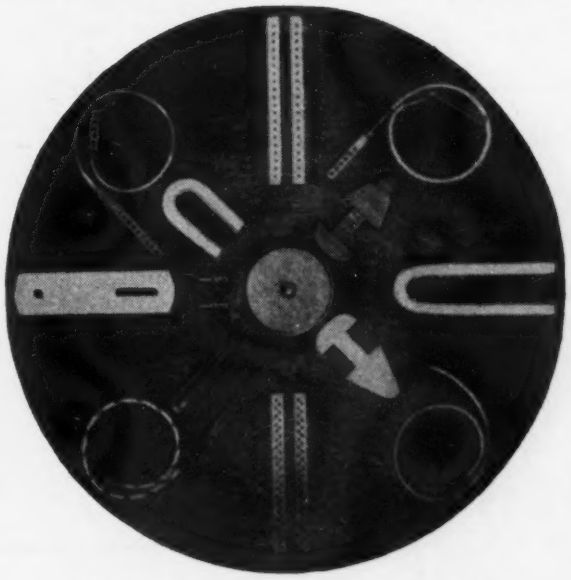
# NATIONAL RING TRAVELER COMPANY

**PHILIP C. WENTWORTH, Treas.**

**PAWTUCKET, R. I., 354 PINE STREET** **CHARLOTTE, N. C.**

ACTUAL SIZE
EMPIRE
textile
mill crayons
THE PERFECT MARKER
FOR ALL TEXTILE MILLS
Especially made for marking the roving in wool, cotton, silk, rayon, and all textile mills.
Supplied in 18 clear, distinguishable colors.
Write to Dept. T-1 for a FREE chart showing these colors.
• Reg. U. S. Pat. Off.
THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

## Rice Dobby Chain Company



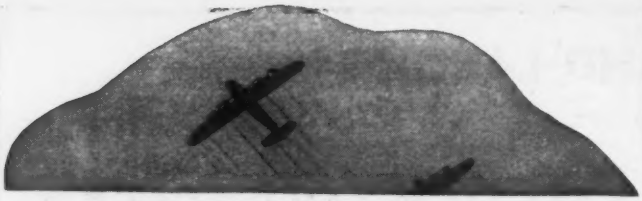
*"Service & Quality"*

**MILLBURY-MASSACHUSETTS**

**U. S. A.**

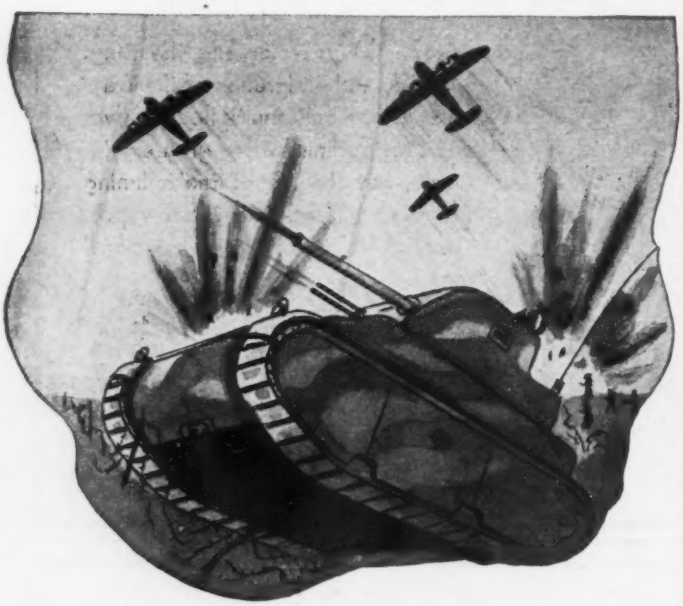
Samples on request

*Southern Representative*
**MR. JOHN P. BATSON**
**P.O. Drawer 1055, Greenville, S. C.**

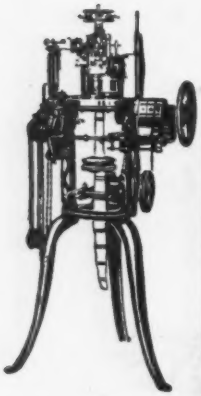


"FIRST THINGS COME FIRST"

FRANKLIN D. ROOSEVELT, PRESIDENT OF THE UNITED STATES



**Your Uncle Sam has right of way insofar as our facilities are concerned. His requirements and his orders come FIRST, and we are proud to serve our country. At the same time, we regret that it may be necessary to ask our customers — users of Brinton Knitting Machines — to wait, until we can care for their needs.**



**BRINTON**

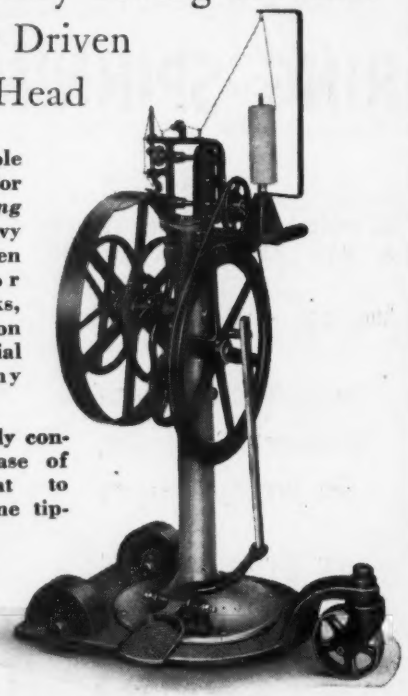
*Circular Knitting Machines*

3700 KENSINGTON AVE.

PHILADELPHIA, PA.

BUY WAR SAVINGS BONDS AND STAMPS

Improved Heavy Duty Foot Power Rotary Sewing Machine With Gear Driven Sewing Head



**The best possible machine built for *heavy duty sewing* on light and heavy cotton and woolen goods, wet or dry, cotton ducks, woolen and cotton blankets, artificial leather or any heavy fabrics.**

**Machine is heavily constructed with base of sufficient weight to avoid the machine tipping, also machine cut gears throughout and rubber tired floor wheels.**

**DINSMORE MFG. CO.**

See Also Textile World Year Book and Catalog

No. 5

SALEM, MASS.

NEBUTTCO

# BRAIDERS

We are confident of our ability to give satisfactory service in arranging your braiding equipment for efficient production.

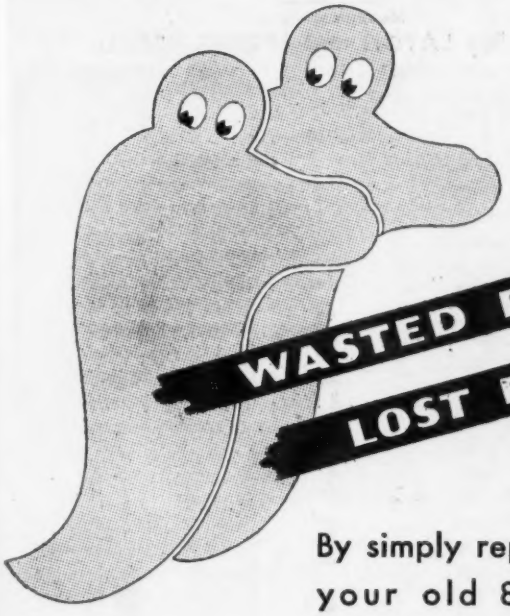
Now is the time to prepare for the post-war period.

If you are formulating plans for the reconstruction era, our engineers are at your service and our experimental laboratory is at your disposal.

**NEW ENGLAND BUTT CO.**

PROVIDENCE 7, R. I.

# BANISH THESE TWIN SABOTEURS



**WASTED FLOOR SPACE...**

**LOST PRODUCTION...**

By simply replacing your old 8-feed machine with a Wildman 16-feed machine—on exactly the same floor space, and with the same man-power, you can actually

## DOUBLE PRODUCTION

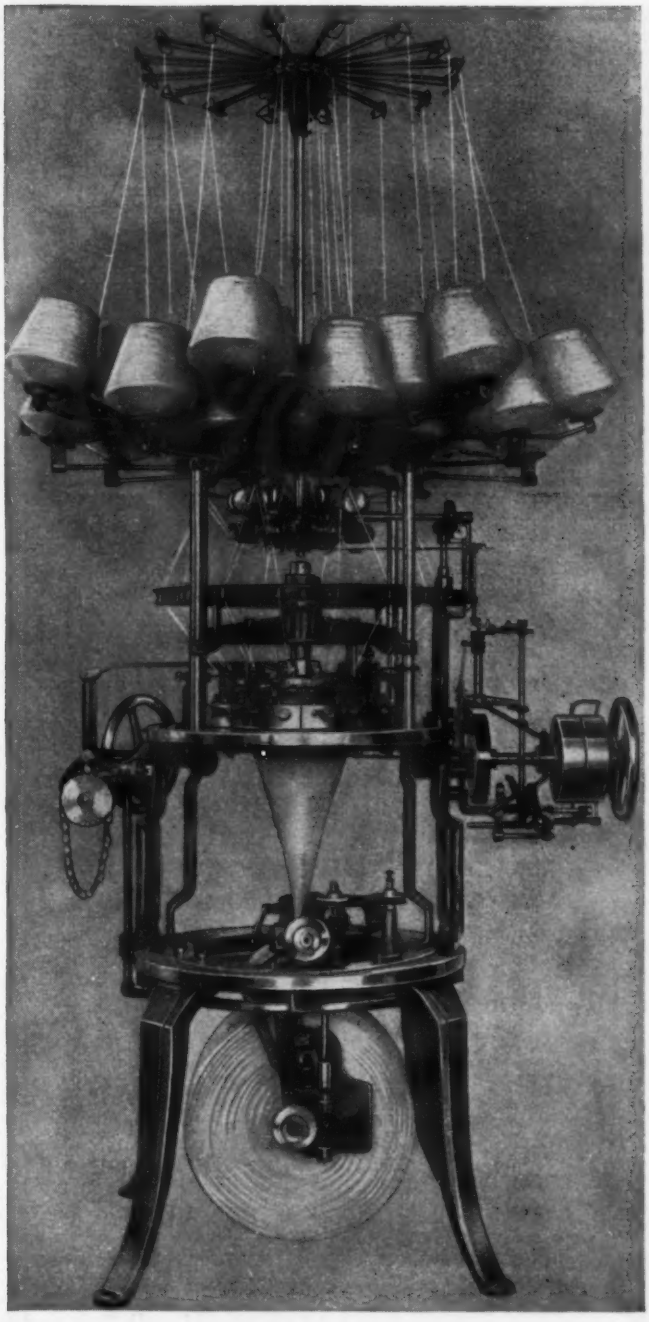
In addition to thus stepping-up of production while using only a third more power—this famous machine delivers a finer, more uniform product, gives easier, trouble-free operation and offers many other advantages that you will be interested to hear.

WRITE TODAY ABOUT THE

## WILDMAN MULTIPLE-FEED RIB MACHINE

To

**WILDMAN MFG. CO., Norristown, Pa.**



**For AMERICA "Throw YOUR SCRAP into the Fight"**

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

# CRANE

KNITTING MACHINES
meet the need for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

*Let us tell you why —and how . . . just* **WRITE**

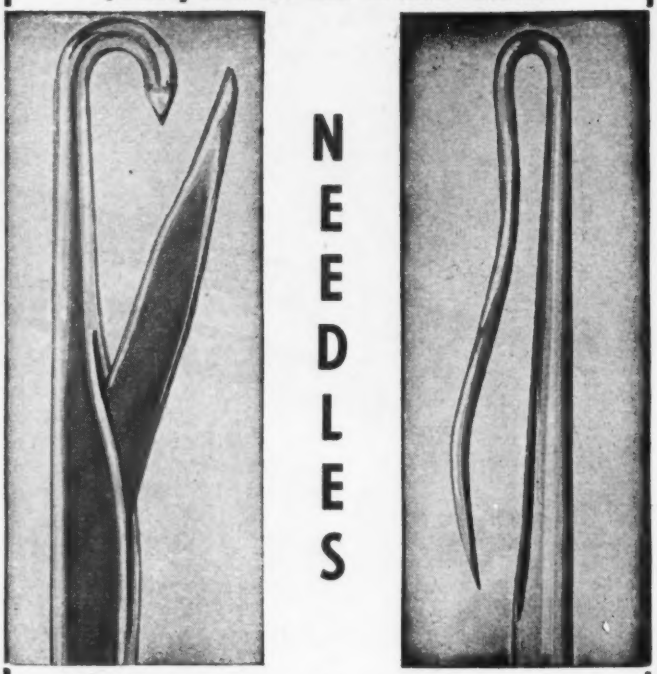
1870 **CRANE** 1943

**MANUFACTURING CO.**
**LAKEPORT, N. H.**

Spring Latch Needle
**KNITTING MACHINERY**

**CHARLES COOPER CO., INC.**
**Bennington, Vermont**

*Manufacturers of*
**Quality LATCH and SPRING-BEARD**



**NEEDLES**

also
*Manufacturers of* **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

# TOMPKINS

**CIRCULAR SPRING NEEDLE**
**KNITTING MACHINES**
***FOR PRODUCING***

| | |
|---|---|
| UNDERWEAR | OVERCOATS |
| SWEATERS | TERRY CLOTH |
| SWEAT SHIRTS | STRIPED CLOTH |
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RUBBER LAY-IN FABRICS

**CIRCULAR LATCH NEEDLE**
**KNITTING MACHINES**
***FOR PRODUCING***

| | |
|---|---|
| TOQUES | SCARFS |
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**TOMPKINS BROS. CO.**
**SINCE 1846** **SYRACUSE, N. Y.**

# Acme Products

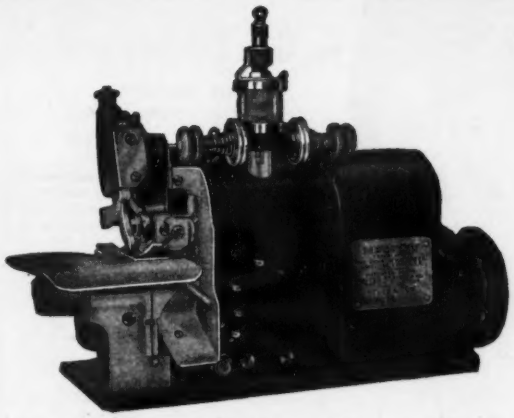
*for seamless hosiery knitting*

Speak for themselves

Up-To-Date Machines

Needles
Economy Makers

**ACME KNITTING MACHINE & NEEDLE CO.**
FRANKLIN, N. H.



Merrow Class A Machines, illlustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

## MERROW HIGH SPEED

**OVEREDGING, OVERSEAMING AND HEMMING MACHINES**

Produce Federal Specification Stitch
Types 501, 502, 503, 504 and 505

**WAR WORK DEMANDS**

Quality Results—High Production
Convenient Handling
Minimum Time-Out for Adjustment
or Repair—Low Upkeep Costs

***Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various War Work and Proper Care and Operation of Machine.***

ESTABLISHED 1838 INCORPORATED 1874

**THE MERROW MACHINE COMPANY**

STARTING ITS SECOND CENTURY

**2803 LAUREL STREET** **HARTFORD 6, CONN., U. S. A.**

ARMSTRONG-BRAY
**STEELGRIP**
FLEXIBLE BELT LACING

ARMSTRONG - BRAY
**STEELGRIP**
Flexible Belt Lacing

8 sizes boxed or in long lengths for wide conveyor belts. Best for rubber and fabric belts because it compresses belt ends and prevents fraying. Applied in a few minutes with a hammer. 2-piece hinged rocker pins. Also, WIREGRIP Belt Hooks that fit any lacing machine. Immediate delivery on both types.

*Write for Circulars*

**ARMSTRONG-BRAY & CO.**
"The Belt Lacing People"
5340 Northwest Highway
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THE LOYAL T. **IVES** COMPANY
EST. 1874

**SPRING BEARD KNITTING NEEDLES**

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

*Sheet Metal Specialties to Order*

**NEW BRUNSWICK NEW JERSEY**

**Machine and Hand Knitting**

*Yarns*

**[French-Bradford]**

**for**

BATHING SUITS
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***Complete color assortments***

**American Woolen Company**

**225 Fourth Avenue** **New York**

**EASY—**
**ECONOMICAL**

Rust control in iron kiers is easy when you coat them with PQ Silicate of Soda. Eliminate loss of time and materials due to staining by using this effective method.

Paint the interior of the kier with the silicate and then dust with white Portland cement. "Star" Silicate or any other PQ Silicate solution you carry in stock is satisfactory.

Let us send you more details and directions on this and other procedures for lining kiers.

**PHILADELPHIA QUARTZ COMPANY**

General Offices and Lab.: 125 S. Third St., Phila. 6
Chicago Sales Office: 205 W. Wacker Drive.
9 Plants • Distributors stocks in over 65 cities.

**PQ SILICATES OF SODA**

**FOR G. I. Full-Fashioneds—**

**LAUREL EMULSIONS, OILS AND FINISHES FOR RAYON AND COTTON**

It's a new era for cotton and rayon full-fashioneds ... they're in the Army now. It's a new era, too, with new problems for finishers, but Laurel Oils and Finishes can simplify their full-fashioned processing. Available for immediate delivery.

**Laurel Emulsions** give more even cotton yarns, clearer stitch and proper regain.

**Laurel Rayon Oils and Finishes** help control rayon twist and stretch, prolong the life of the fibers.

**Laurel Hosiery Finishes** produce the smooth finish that is the pride of the American woman whether on parade or promenade.

*Send for trial order and formula today.*

**SPEED VICTORY—BUY WAR BONDS**

SOAPS • OILS • FINISHES
*Laurel*
**SOAP MANUFACTURING CO. INC.**

WM. H. BERTOLET'S SONS ESTABLISHED 1909
TIOGA, THOMPSON & ALMOND STS., PHILADELPHIA, PA.
WAREHOUSES: PATERSON, N. J. CHATTANOOGA, TENN. CHARLOTTE, N.

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for cottons, rayons and mixed goods

**THE STANDARD DE-SIZING AGENT**

*. . . always efficient, dependable, speedy and economical.*

*Our technical men are at your service for any de-sizing problems.*

**WALLERSTEIN COMPANY, INC.**
**180 MADISON AVENUE, NEW YORK**

**PENICK & FORD, LTD., INCORPORATED**

**CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS**
**NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA**
**SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.**

John:
The Starches and Gums which Penick and Ford manufacture for polishing twine and cord have been developed for every phase of this operation.
Lets try their recommendation.
Jim

ONE MINUTE TALKS ON

## Safely De-Scaling Your Jacketed Mixers!

Jobs men find easy to do get done promptly. They are not neglected or put off. De-scaling steam or water jacketed mixers, kettles, shredders or other processing equipment, is a good example.

By using the recommended solution of Oakite Compound No. 32, you will find all lime scale, rust and other insulating deposits are easily removed. No dismantling is required. Heat transfer efficiency is restored in surprisingly short order. On this or any other mill maintenance cleaning or de-scaling work, consult our nearby Technical Service Representative or write for FREE data TODAY.

**OAKITE PRODUCTS, INC.**
**42 Thames Street, New York, 6. N. Y.**

*Technical Service Representatives Located in All Principal Cities of the United States and Canada*

**OAKITE** *Specialized* **CLEANING**
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

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MANUFACTURERS OF
Textile, Laundry
and
Special Soaps

WRITE US FOR SAMPLES AND QUOTATIONS

ROME, N. Y.

## D. R. KENYON & SON
RARITAN, N. J.

TENTERING and DRYING MACHINERY

MANUFACTURERS OF
DYESTUFFS • DYEWOODS
CHEMICAL SPECIALTIES
*for Textiles and Allied Trades*

## PROGRESSIVE RESEARCH *in War as in Peace*

Our many years of experience in the manufacture of Quality Products enable us not only to meet the pressing problems of Today . . . but also to help you prepare for the requirements of tomorrow. We are pleased to place this experience and our research facilities at your disposal. Tell us how we may serve you.

**A FULL LINE OF** Dyestuffs, Converted Starches, Waterproofing Agents, Sulphonated Oils, Finishing Compounds, Penetrators, Detergents and other Chemical Specialties.

## COMMONWEALTH COLOR & CHEMICAL CO.

*Main Office and Works:*
Nevins, Butler and Baltic Streets, Brooklyn, N. Y.

Philadelphia · Chicago · Charlotte
Gloversville · Kansas City · Montreal

**WANTED**

## Seamer and Looper Fixer

A seamer and looper fixer for Southern Full-Fashioned Hosiery Mill. Full-Fashioned Fixer preferred, however, will consider to train a good seamless man. In writing, please give full details concerning your experience. Must be draft deferred.

**P-767,** Textile World
330 West 42nd St., New York, 18, N. Y.

## SILK THROWING EXECUTIVE

**WANTED—For large, modern throwing plant, Manager qualified to produce most efficiently and perfectly all types of yarn for the weaving and particularly the hosiery knitting trade. Must have tact, thorough experience, with an unquestionable background to substantiate requisites. Address in confidence—**

**Charles P. Raymond Service, Inc.**
**294 Washington St. Boston, Mass.**
*Over Forty-five Years*
*Confidential Employment Service for Mills.*

**WANTED**

## MECHANICAL ENGINEER

Design background in small special machinery for development department of progressive manufacturer of synthetic materials. Excellent peacetime future. Give complete details and salary expected. Location Northern New Jersey.

Reply **P-783,** Textile World,
330 West 42nd St., New York 18, N. Y.

**WANTED**

Man with Chemical training to sell our products to the textile, leather, and allied industries. To locate in Philadelphia and travel in Pennsylvania and surrounding States. Should be able to demonstrate and assist in the solving of dyeing, finishing, and kindred problems. Apply only if qualified, stating age and draft status.

**JACQUES WOLF & CO.**
**Passaic, N. J.**

### POSITIONS VACANT

JACQUARD RASCHEL MECHANIC — experienced—with thorough knowledge of repairing, designing and drafting. P-768, Textile World, 330 W. 42nd St., New York 18, N. Y.

MILL MAN wanted—practical, experienced—to take charge of warping, twisting and quilling departments in medium size rayon weaving mill; must be capable and able to fix his own machines and be familiar with every operation in these three departments. When applying state age, experience and salary expected. References. P-769, Textile World, 330 W. 42nd St., New York 18, N. Y.

PLANT ENGINEER for viscose rayon manufacturer. Rayon experience not needed but desirable. Must have successful record of broad experience as plant engineer or assistant engineer. Plant located in New England. Permanent position. Give complete details of training and experience, references, draft status, availability, salary desired and photograph. P-770, Textile World, 330 W. 42nd St., New York 18, N. Y.

PRODUCTION MANAGER Braided Rug Mill. Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division, excellent future for right man who must be conversant with all phases of business, including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential. P-771, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE CHEMIST wanted for a Research Laboratory, with practical experience in printing; high educational background; familiar with permanent finishes and their components. Apply describing education, experience, references and salary expected to P-772, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERVISOR of Rayon Preparatory Department wanted for Southern Mill. Man should be experienced in all phases of throwing, copping, warping, and slashing on all types of synthetic yarn. In replying, give complete record of previous experience and employment. Confidential. Our men know of this advertisement. Address reply to P-773, Textile World, 330 W. 42nd St., New York 18, N. Y.

LADIES' FULL FASHIONED HOSIERY FIXER wanted thoroughly familiar with H. S. L. Machines. Apply P-774, Textile World, 330 W. 42nd St., New York 18, N. Y.

OFFICE ASSISTANT conversant with all types of textile machinery, good correspondent, and with ability to handle details of small office located in New York City. State qualifications as established by previous experience in the textile industry, draft status, salary expectation and if any knowledge of Spanish. P-788, Textile World, 330 W. 42nd St., New York 18, N. Y.

**(Additional Position Vacant Advertisement on page 222)**

### EMPLOYMENT SERVICE

MASTER MECHANICS, Plant Engineers, Mechanical Superintendents, Draftsmen and Electricians for textile mills. Charles P. Raymond Service, Inc., 294 Washington St., Boston, Mass.

**WANTED**

## FIXERS

**For Scott and Williams hosiery knitting machines, steady employment.**

**P-766,** Textile World
330 W. 42nd St., New York 18, N. Y.

**WANTED**

## Representative—Consultants

**Well-known industrial instrument company desires to expand sales organization looking forward to post war activities. Splendid opportunity for technically trained engineers, preferably with chemical or mechanical background. Nature of work requires persistence and ability to cooperate as a consultant with prospects rather than high pressure selling. Locations open are Boston, New York, Philadelphia, Pittsburgh, Cleveland, Milwaukee, Indianapolis, North Carolina, Kansas City, Houston, Los Angeles and San Francisco.**

**RW-758,** Textile World
330 West 42nd St., New York 18, N. Y.

## UNUSUAL OPPORTUNITY

**to join sales department of prominent chemical manufacturer. Permanent post-war position on salary and profit sharing basis.**

- **Cotton man wanted for deep South**
- **Hosiery man wanted for Pennsylvania**

**SW-761,** Textile World
330 W. 42nd St., New York 18, N. Y.

**(Additional Selling Opportunity Advertising on page 259)**

### POSITIONS WANTED

SUPERINTENDENT, Textile School graduate, 40 years of age, married, 15 years experience in silk rayon and cotton desires change. PW-707, Textile World, 330 W. 42nd St., New York 18, N. Y.

BLEACHERY SUPERINTENDENT. Over 20 years technical and practical experience in Bleaching, Dyeing and Finishing Cotton and Rayon piece goods. Am competent and progressive and desire permanent position with reputable concern. PW-750, Textile World, 330 W. 42nd St., New York 18, N. Y.

COTTON YARN Mill Man. Carding or Spinning or can Oversee both or Superintend Cotton Yarn Mill. PW-753, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUISSE TECHNICIAN, age 35 with 20 years of practical mill experience in silk and rayon, plain, fancy and jacquard. Suisse textile school graduate. Finish contract in Guatemala, desire to make a change. Will go anywhere, South or North America. Write to Conrad Zobeli, Callejon Manchen No. 6, Guatemala City.

PRACTICAL PURCHASING AGENT. I have a friend who, I believe, would make some firm a good practical purchasing agent. He not only has had practical experience in all departments of a cotton mill, but now does the purchasing for a small plant as a part of his duties. About 40 years old. Draft class 3-AH. If interested, may I send him to you for personal interview. F. Gordon Cobb, Box 2671, Charlotte, N. C.

ASSISTANT OVERSEER of Weaving desires position as Overseer. 39 years of age, married. 18 years experience on Denim and 3 yard Sport goods. Draper and Hopedale looms. 8 years as assistant in large southern mill. PW-775, Textile World, 330 W. 42nd St., New York 18, N. Y.

SUPERINTENDENT Warping, Slashing on weaving by a young experienced with dress and sheer goods linings fancy and novelty box and dobby weaves C&K Stafford and Draper looms. PW-776, Textile World, 330 W. 42nd St., New York 18, N. Y.

**(Continued on page 259)**

## UNUSUAL OPPORTUNITY

**Time-study man wanted at once to head up program of rate setting and work-load development in progressive, well established New England weaving mill. Must be thoroughly experienced on loom-work loads. Permanent position now on war and civilian work. Exceptional opportunity to assist management in installation of production and incentive plan involving over 600 employees. Substantial salary for right man.**

**P-782,** Textile World
330 West 42nd St., New York 18, N. Y.

## Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

**CHARLES P. RAYMOND SERVICE, Inc.**

**Phone: Liberty 6547** **294 WASHINGTON STREET, BOSTON 8, MASS.**

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# SEARCHLIGHT SECTION
# TEXTILE WORLD ANNUAL
FEBRUARY, 1944

## WHERE-TO-BUY
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(FOR FURTHER INFORMATION, WRITE: DEPARTMENTAL STAFF, TEXTILE WORLD, 330 W. 42nd ST., NEW YORK 18, N. Y.)

# DISPOSE OF...!

You textile men know how the whole picture is changing! With war-demands being curtailed and civilian production plans to be considered—you MUST get rid of certain equipment QUICKLY, rearrange your plant, replace many units with others. TODAY the services of a reputable, experienced Dealer (such as "MLC" with over 18 years of experience) who can save you days, weeks or months *is an invaluable asset*—and experienced mill men who depend on "MLC" KNOW IT!

## "MLC" has a ready market

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When you engage "MLC" to Sell or to Buy for you ("from a Case to a Carload") a giant hand will not actually reach into your plant! But the *effect* will be the same. For "MLC" *knows* where the buyers are—*knows* what they need—*knows* where good replacement equipment is to be had—and gets it quickly for you at low prices . . . letting you concentrate on your own pressing problems of mill adjustments and maintenance, new markets and general changeovers. Yes, in these changing times, an experienced, reputable Dealer MUST be part of any profitable production setup—and "MLC" measures up to every requirement!

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*If you've had the experience of trying to get machinery yourself you know how difficult it is not only to get what you want QUICKLY but to be sure you're getting really good "Used Equipment" at a fair price. Here is where expert Dealer Service (such as "MLC" renders) is a SHORT CUT to getting DEPENDABLE EQUIPMENT at the RIGHT PRICE. "MLC" has ready, or can quickly get for you, the equipment to meet your urgent needs.*

"FROM A CASE TO A CARLOAD"

**WRITE . . . PHONE . . . OR WIRE**

**PUT OUR MORE THAN 18 YEARS EXPERIENCE TO WORK FOR YOU**

MLC

# BUY NOW...!

GET DEPENDABLE MACHINERY — AT THE RIGHT PRICE — AND GET IT WHEN YOU WANT IT —

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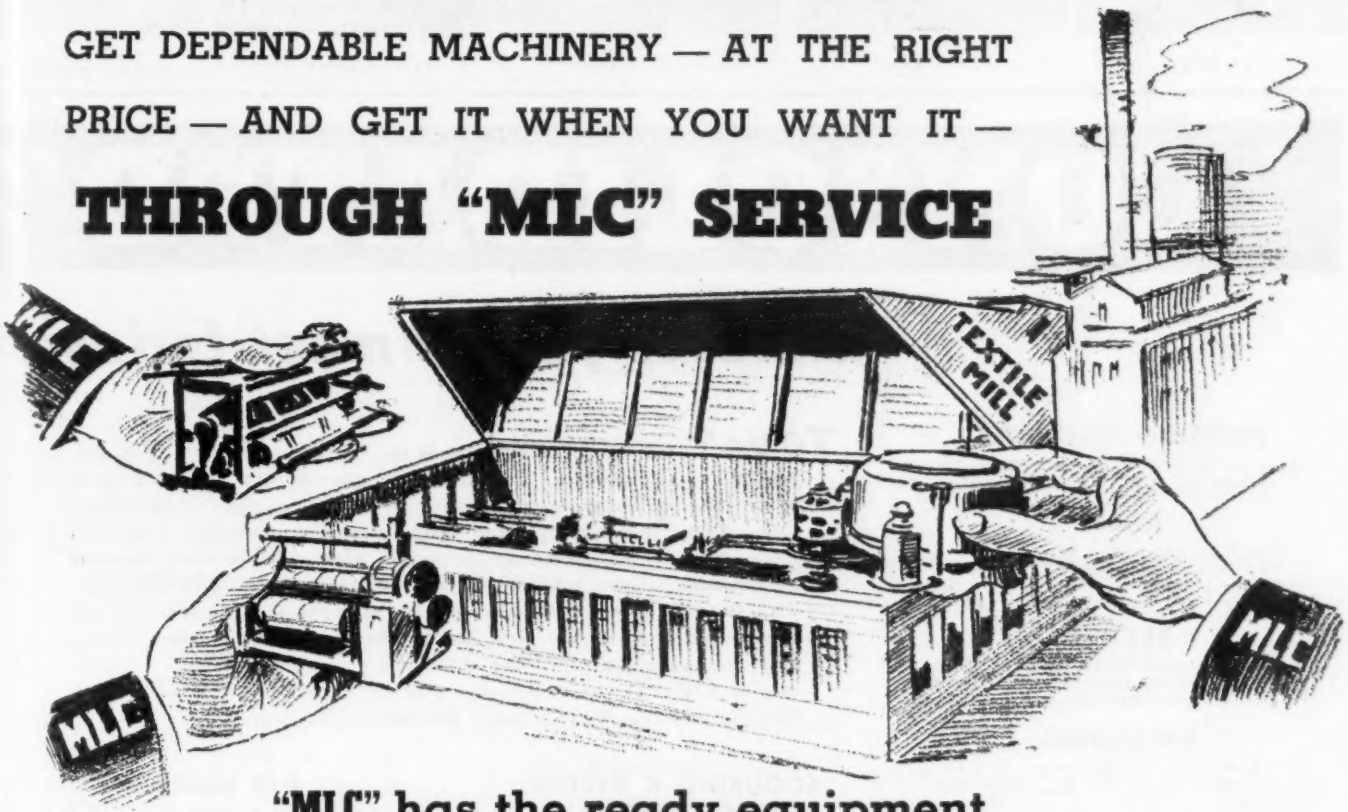



## "MLC" has the ready equipment FOR YOUR URGENT NEEDS—

PARTIAL LIST OF STOCK ITEMS READY FOR IMMEDIATE DELIVERY

2—46" Button Breakers
1—52" Button Breaker
1—Rotary Cloth Cutter
1—46" Windle Doubler
1—36" Doubling & Winding Machine
5—Dblg., Boarding & Winding Machines
1—28" Stick Klauder Weldon Skein Dyeing Machine
1—24" Empire Extractor
1—36" Empire Extractor
1—48" Tolhurst Extractor, Belt Driven
4—42" Elliott & Hall Folding Machines
1—40" Elliott & Hall Folding Machine
4—46" Elliott & Hall Folding Machines
2—6 delv. Whitin Drawing Frames with 12" coilers
2—Schultz Fulling Mills

58—38" Model E Draper Auto. Looms
19—44" Model D Modified Draper Auto. Looms
50—52" C & K 4 x 1 Auto. Looms, 56½ R.S. 25 Har. Bell Driven
6—82" C&K (4x4) 25 Harness Woolen Looms

**COMBERS**

1—Complete Set including:
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
8—Whitin Model "C" Combers

**CALENDER**

1—42" Butterworth 3-Roll Friction and Rolling Calender, motor driven

1—40" D&F Mixing Picker
1—66" Gessner dble. Bed Cloth Press Mtr. dr.
1—66" Voelker Cloth Press
1—Schulze 106" Double Shear
9—264 Spindle Whitin Spinners 1¾" R 3" Gge.
1—Pair 60" x 8" dia. Squeeze Rolls
2—60" Edge Stenciling & Winding Machines
1—Wood Tank (I.D.) 86"L x 26"W x 27"D
1—Wood Tank (I.D.) 55"L x 27½"W x 26"D
1—Monel Lined Tank Wood Frame (I.D.) 8'L x 2'6"W x 2'2¾"D
3—110 Spindle Hopedale 3" Ring Twisters
1—56 Spindle Draper 2½" Ring, 3½" Gge Twister
1—44" Simplex Winding & Measuring Mach. Mtr. dr.
1—Barber Coleman Auto. Warp Tying Mach., size 4-E.

## MACHINERY LIQUIDATING COMPANY

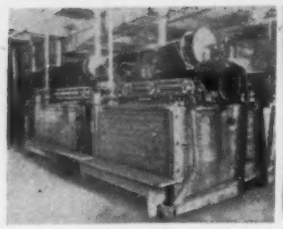
*OPA REGISTRATION NUMBER 789*

EST. MLC 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

*DEALERS IN TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES*



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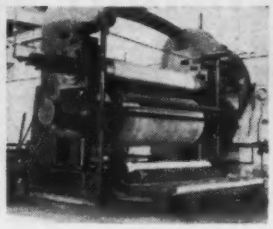

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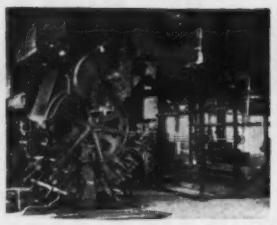
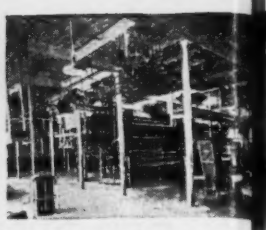


Print Machine



Cam Dryers
Simpson Batchers

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### PRINTING MACHINES

10—R. B. & F. 1 to 10 color Print Machines, 40" to 64" wide, complete.

### AGERS

1—Cast Iron Ager, 18' x 60".
1—Cast Iron Ager, 12' x 66".
1—30' Steel Ager.
1—Haveg Patch Ager.

### KETTLES

20—Textile Copper Steam Jacketed Color Kettles, tilting type, agitated. 24 to 100 gallons capacity.

### CALENDERS

2—V.V. Ball bearing Calenders, 50" & 60".
2—McCreary 50" & 54" Knit Goods Calenders.

### DRYERS

3—National Loop Dryers, 28', 33' & 65' lg.
1—Phila. Dry Mach Co. Hurricane Continuous Skein Dryer.
1—P. & S. 72" Raw Stock Dryer, Automatic Feed.
1—Phila. Raw Stock Dryer, 48" Automatic Feeder.
1—P. & S. 36' Loop Dryer, 90" poles. Rebuilt by National. Equipped with high speed booster fans, airfins.
1—Single Truck Dryer.
1—60" Dry Tower for print machine, air fins.
3—P. & S. and Sargent Conveyor Dryers.

### FULLING MILLS

6—Rodney-Hunt Fulling Mills, gear drive.
2—Single Line Fulling Mills, rubber rolls.

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450—Dry Cans, 50" to 108" face, 23" to 84" dia.

### DECATERS

1—Gessner Full Decating Machine, 72" wide.
2—Gessner semi-decating machines, 50" & 72" wide.

**TODAY** the Textile Industry needs the four-fold service of "CONSOLIDATED" as never before. The slacking of war contracts and the promise of early resumption of civilian output calls for prompt plant reorganization —for selling worn or unwanted textile machines, replacing them with others, possibly liquidating all or part of your plant or even complete reorganization of your setup toward post-war production. "CONSOLIDATED" CAN HELP YOU in all these things. We offer the services of a big and experienced organization, with industry-wide connections, large stocks, many contacts and a knowledge of the field gained by more than a quarter of a century of service to industry. Call on "CONSOLIDATED" with CONFIDENCE to solve your equipment problems in the days ahead.

### SCOURING & DYEING MACHINES

2—Haveg Dye. or Washing Machines, completely enclosed, 51" wide.
1—Sargent 3-Bowl Skein Scouring Machine.
3—Klauder-Weldon Skein Dyeing Machines.
1—Obermaier 400# Package Dyeing Machine.
1—Sargent 4-Bowl Wool Scouring Washer, 48".
1—Rodney Hunt 7-String Dyeing Machine.
1—Berks All Monel Metal 4-Pocket Rotary Dyeing Machine.
1—Obermaier Combination Package & Rawstock Dyeing Machine.

### NAPPERS

8—D & F, Woonsocker & P & W Nappers, 60" to 90".
1—Gessner 20-Roll 66" Double Acting Napper.
1—60" Box Napper.
2—Single Roll Nappers or Brushing Machines.

### DYE JIGGS

6—Dye Jiggs, 54" rubber covered rolls
1—Battery 4-Butterworth stainless steel lined Dye Jiggs, 45".
1—Battery 4-Morrison stainless steel lined Dye Jiggs, 50", tilting expanders.

### DYE BECKS

25—Butterworth, Morrison & V.V. 6' & 8' Dye Becks, stainless steel and wood tubs.
10—Morrison & V.V. Dye Becks.

### TENTER FRAMES

1—W. & J. 95' x 50" Swing Tenter Frame.
1—80' Swing Tenter Frame.
1—Heathcote Pin Tenter Frame.
2—25' Pin Tenters.

### FLAT FOLDERS

4—Elliot & Hall Flat Folders, 42" to 60".

### OPEN WASHERS

1—Continuous Full Width Washer, consisting of 3 sections, 4 nips, each section, 66".
1—60" Continuous Boil-Off Machine, steel tanks.
1—Van Vlaanderen 18-compartment Print Washer.
1—Van Vlaanderen 60" Open Washer
1—Textile 8-compartment Open Washer.

### ROPE SOAPERS

1—Van Vlaanderen Continuous Square Formation Washer.

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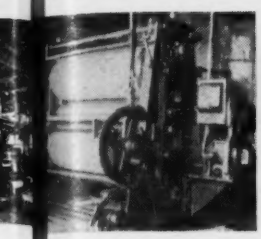

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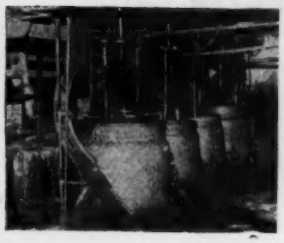
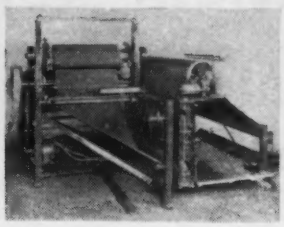
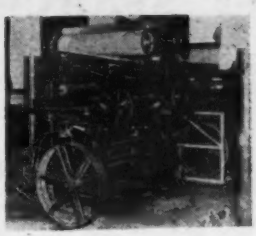


Jacketed Copper Kettles



Doubler



Model E
Parks & Woolsen Doubler

Hydro-extractor

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## conditions in the Textile Industry

### SHEARS

3—P. & W. Double Blade Shears, 60" with list saving device.
1—P. & W. 3-Blade Shear, 60½" with list saving device.

### BLEACHING

8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type.
2—Lincoln 2-Roll Rope Squeeze Rolls.

### LOOMS

42—Crompton & Knowles, 82" 4 x 1 Automatic Looms.
25—Crompton & Knowles 100", 4 x 4 Blanket Looms.
100—Crompton & Knowles 50" Rayon Looms.
94—Draper Automatic Model E 44" Looms.

### BEAMERS—BATCHERS

4—Van Vlaanderen 50" & 55" Beamers.
20—50" & 60" Batchers.

### EXTRACTORS

4—V.V. & Tolhurst 60" rubber & copper basket Extractors.
10—V.V. Fletcher & Tolhurst 40", 44", 48" Extractors, copper lined.
12—Tolhurst, American Laundry, Adams, Troy & Bach Copper Lined Extractor, 17", 20", 26", 28" & 32".

### WATER SOFTENERS

1—Permutit Water Softener, 103" hg, 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
2—Pressure Sand Filters, 8" dia., x 20' lg, complete with pipe and valves.

### WORSTED & COTTON SPINNING FRAMES

24—Ring Spinning Frames, 160 spindles, 8½" pitch, 8" travers, 1¾" ring, 4" front roll.
14—Lowell Cotton Spinning Frames, 3" gauge, 2" ring.

### PADDERS, MANGLES, QUETCHES

4—Textile 50" 2-Roll Dye Padders.
5—Butterworth 50" 2-Roll Starch Mangles.
2—Textile 80" 2-Roll Mangles.
8—Butterworth & Morrison 2 & 3-Roll Quetches, 50", 60", 64" & 72" wide.
5—Quetches, 2 & 3-Roll, 36-72" wide.
1—James Hunter 50" Water Mangle.

### PUMPS

2—Deep Well Pumps.

### PRESSES

1—Logemann All Steel Paper Baler
2—Schiem & Economy All Steel Presses.
1—Gessner 72" Wool Press.

### SINGEING MACHINE

1—80" 2-Burner Singeing Machine.

### BUTTON BREAKERS

3—Morrison & V.V. Button Breakers, 50", 60", 72" brass rolls.

### STEAMING & FINISHING MACHINES

3—Steaming Machines for Tubular Goods.
2—C & M Finishing Machines for Tubular Goods.

### EXAMINING MACHINES

2—Examining Machines for Tubular Goods.

### SEWING MACHINES

5—Merrow 60ABB & 60D3B Sewing Machines on tracks.
4—Merrow 60ABB & 60D3B Sewing Machines on portable stands.

### CONDITIONING MACHINES

2—Sjostrom Cleaning & Conditioning Machines.

### DOUBLERS

8—P. & W. & Windle 46-66". Doubling, Reeling & Measuring Machines.

### PALMER QUETCHES

3—Morrison & V.V. 50", 60" & 72" Palmer Quetch Units.
1—V.V. Palmer Quetch Unit, low type, 65" wide.

### COUNTERS

250—Waltham Pick Counters.

### MISCELLANEOUS

Skein Reeler, Universal Tubers & Winders, Gas Boiler, Scutchers, Expanders, Sewing Machines, Trucks, Generator Sets, Motors, Rubber Lined Tanks, Modine Heaters, Exhaust Fans, Pleaters, Mandrils, Doctor Blades, Gears, Lathes, Portable Agitators, Accumulators, Wood Shells, Weidemann Control Unit, etc.

### REORGANIZATION or LIQUIDATION

Many times it is far better to hold a plant together, reorganize it, get it into production again—than it is to sell out. "Consolidated" by virtue of long experience, is equipped to reorganize or rehabilitate a plant, and reopen it quickly . . . or to liquidate it, if that seems best. In either case, you may depend upon our Know-how to get you the results best for you and your country.

## KEEP BACKING THE VICTORY ATTACK!

# PRODUCTS CO., Inc.

FOR 25 YEARS — A SYMBOL OF CONFIDENCE

TEXTILE DIVISION, PATERSON, N. J., 5th Ave. & McClean Blvd.
Equipment, N. Y. Tel. ARmory 4-6540
CHEMICAL • PLASTICS • CEMENT • PAINT • ROCK PRODUCT • RUBBER

LAST YEAR WE SAID:
On Duty In War Emergencies
READY FOR DELIVERY FROM OUR OWN STOCK:
WE PURCHASE
WE PROCURE
Now we are on
★ WAR CONTRACTS TAPERING OFF
★ WORN EQUIPMENT TO BE SOLD
★ EQUIPMENT REPLACEMENTS TO BE MADE
★ TEXTILE MILLS TO BE REARRANGED

## • • • ready for delivery from Our Own Stocks

### SEWING MACHINES

1—Dinsmore Footpower #9A (Cam-Motion) New
2—Dinsmore Power Sewing Machine (Rotary)

### PRINTING MACHINES

1—40" R. B & F. Printing Mche. 5 colors complete
1—50" French 1-color Flock Prtg. Mche.

### MANDRILS W-BORE

21—45" Face
14—42¾" Face
10—44" Face
12—Various Widths

### OPEN WASHERS

1—1-Box Washer (Haveg Acid Resisting Box) 61" wide 103" long 38" deep, with 2 roll Squeezing Pad—48" Copper Immersion Rolls
1—8-Box with 8 Pair of Nip Rolls—Brass & Rubber C.I. Tanks 50"
1—4-Box 4 Pair of Nip Rolls 50" (No Boxes)
1—2-Box 2 Pair of Nip Rolls 50" (No Boxes)

### JIGS

3—72" Butterworth — Rubber Beans — Friction Clutch, Wood Boxes, Plain or Stainless Steel lined
2—45" Jigs, lined
2—45" Jigs, lead lined

### KETTLES

1—Copper Glue Kettle 18" x 17" C.I. Jacket & Stand
1—85 Galls. Jacketed Copper Kettle with Agitator and Stand

### PADDERS & MANGLES

2—42" Pads., Top Copper—Bottom Rubber—Screw & Lever Set
4—46" Pads, Top Copper—Bottom Rubber—Screw & Lever Set
1—42" Pads, Top Rubber—Bottom Rubber—Screw & Lever Set
1—42" Pads, Top Rubber—Bottom Brass —Screw & Lever Set
1—50" Pads, Top Rubber—Bottom Rubber—Screw & Lever Set
1—50" Pads, Top Rubber—Bottom Brass 10"—Screw & Lever Set
1—46" Mangle, 2 Rolls—Top Wood—Bottom Copper
1—42" Mangle, 3 Rolls, All Rubber—Screw & Lever Set
1—47" Mangle, 3 Rolls—Top & Bottom Husk—Middle Brass
1—48" Mangle, 3 Rolls—Top & Bottom Husk—Middle Brass

### TENTER FRAMES

1—60' Textile Tenter—W. & J. Side Opening Clips, 50" Wide
2—90' W. & J. Tenter—Ball Bearing (Enclosed Gears) S. Steel Side Opening Clips, 52" Wide
1—30' W. & J. Tenter with Batcher—Sliding Expander, Boland Housing & Heater, 60" Wide
1—40' Textile Tenter, 102" Wide
1—40' Arlington Tenter (No Chain) Suitable for Coating

### CALENDERS

1—3 Bowl Morrison Rayon Cal. 50" Ball Bearing
1—3 Roll Hydraulic 42" French make
1—5 Bowl Water Mangle, 3 Brass 2 Husk Bowls—66"

### TENTER CHAINS

970 W. & J. Clips # 6 for Mercerizing
203 Links of Pin Chain
1200 Pin Clips
1200 Butterworth Pin Chain, 99" Top-Opening
600 Butterworth Pin Chain, 99" Side-Opening
600 Van Vlanderen Aluminum Spring Clips
740 W. & J. Mercerizing Clips
740 W. & J. #6 Brass Plates and Gates
5 Sizes New Rivets Abt. 15,000 Available

### DOUBLERS & ROLLERS

1—47" P. & W. (China Man) D. & R. Mche.
1—66" Windle D. & R. Mche.
1—40" Schoefield D. & R. Mche.

### BUTTON BREAKERS

1—48" Van Vlanderen 19 Roll (Bakelite)
2—45" Van Vlanderen 19 Roll (Steel)
1—50" Van Vlanderen 19 Roll ½ Wood ½ Rubber

### EXPANDERS

2—96" Steel Expanders
2—50" Rubber Expanders
2—60" Bulldog Rubber Expanders
2—50" Brass Expanders
2—54" Brass Expanders

### SIZING TANK

1—200 Galls. C.I. Sizing Tank with Agitator

# duty to help solve problems* of READJUSTMENT

### SCUTCHERS

1—40" Ball Bearing
4—36" Ball Bearing
1—37" Plain Bearings
1—42" Plain Bearings

### MISCELLANEOUS

1—#3 Eppebach Colloid Mill with DC Motor
4—Cummins Humidifier Heads #110
2—Cloth Winders for Moiree Cal. 50"
1—68" Van Vlanderen Palmer Finisher, 5' x 2' Cylinders
1—65" 2 Roll Quetch—Rubber Rolls, 6" Diam. Copper Pan
16—4 Wheel Trucks 30" High—14" Wide —36" Long
1—12" Table Saw and Motor
12—Fitting Gears for Printing Mche.
2—Double End Grinders
1—Single End Grinder
1—Set of Electr. Guiders with Electric Eye
1—Riley Heater
1—Riley Cooler
1—Van Vlanderen Horizontal Starch Mixer with 15 HP. Motor, 220/440
1—Van Vlanderen Horizontal Roll Extractor with Motor
1—Duplex Air Compressor, Model NSB-5767—2 Stage—12x9x14, 314 CF. Free Air
1—4" Centrifugal Pump
1—72" 3 Blade Montfort Shear with Brushes
1—Set of 4 Copper Cans 5' Diam. 60" Wide, with Stand and Drive
1—5' Copper Can 60" Wide
1—Post Horizontal Boring Mche.
1—50" Butterworth Aniline Ager
1—50" Kemp High Pressure Autom. Gas System and Expansion Tank—Safety Tanks—Piping and Valves

### MISCELLANEOUS (Continued)

5—Swing Folders
2—Sjostrom Conditioning Units with Brass Rolls, 50"
9—9' Rope Soapers—Stainless Steel Reels with Alternating Wood Slats—11 Compartment Box—2 Rubber Squeeze Rolls—Friction Clutch
2—Sets of 8 Copper Dry Cans, 50"
3—Hunter Log Washers—2 Maple Logs 9'-6" Pit Roll—Friction Clutch
1—7' Single Drum Slasher—Complete
4—Sacco—Lowell Tinting Boxes, 60"
1—Textile Squeezer 16" x 18" Rubber—Brass Screw and Lever Pr.—Friction Drive
1—C. & M. 43" Examining, Brushing & Winding Mche. with Rolling-up Head
400—Porcelain Pot Eyes 2" to 5" Opening

### BLOWERS

2—#1 Sturtevant
2—#4E Buffalo Connected to ½ HP. D.C. Motors
1—#7 Sturtevant
1—40" Boston
2—45" Boston
1—#6 Sturtevant Blower
3—#5 Sturtevant Monogram
1—#2 Sturtevant American "Rotary, High Pressure"
2—#3½ American Root "Rotary, High Pressure"
1—#21 Spencer Direct Connected to ¾ HP. 110/220 V.

### ROLLS

1—Brass 48" x 11" with Gear
1—Brass 66" x 12⅝" Diam.
1—Brass 68" x 13½" Diam.
1—Brass 68' x 13½" Diam.
1—Copper 68" x 11¾" Diam.
1—Brass 51" x 18" Diam.—9" Shaft
1—Brass 45' x 16½"—2 15/16 Shaft

### ROLLS (Continued)

1—46" Rubber Roll 13¾" Diam.—2¾" Shaft
1—48" Rubber Roll 8" Diam.—2 7/16" Shaft
1—40" Rubber Roll 13⅞" Diam.—2¾" Shaft
1—51½" Rubber Roll 11 13/16" Diam.—3⅞" Shaft
3—42" Rubber Roll 12½" Diam.
1—77½" Rubber Roll 10" Diam.—2⅜" Shaft
1—61" Rubber Roll 6" Diam.—1 15/16" Shaft
1—120" Rubber Roll 6" Diam.
3— 74" Rubber Roll 6" Diam.
1— 48" Rubber Roll 13½" Diam.
2— 42" Rubber Roll 13" Diam.
1—New Husk Roll 48" x 16"—4½" Diam. Shaft
1—New Husk Roll 47⅝" x 16" 4 7/16" Diam. Shaft
1—New Husk Roll 43" x 16" 4 11/16" Diam. Shaft
1—New Husk Roll 48" x 16" 4½" Diam. Shaft
1—Cotton Roll 37" x 18" 6" Diam. Shaft
1—Cotton Roll 41" x 19" 6" Diam. Shaft
1—Cotton Roll 120" x 19" 10" Diam. Shaft
1—Squeeze Roll 20" x 17" Chrome Tube Cover
1—Squeeze Roll 16" x 18" All Brass
4—Steel Rolls 47" x 8½" and 42" x 14"
1—Steel Rolls 48" x 13½"
2—Steel Rolls 42" x 13"
3—Steel Rolls 56" x 9" 2¾" Shaft
1—Steel Rolls 63" x 9" 2 3/16" Shaft
1—Chromium Rolls 63" x 9" 2¾" Shaft
8—Engraved Shreiner Steel Rolls 50"
3—Engraved Embossing Rolls

# Textile Auxiliaries

BUY WAR BONDS WITH SAVINGS ON USED MACHINERY

Office and Warehouse: 15-17 ORMSBEE AVE. PROVIDENCE, RHODE ISLAND

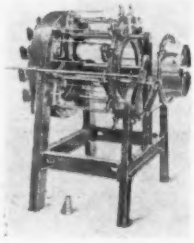
# Replacing WAR WORN Equipment?

## We offer Complete Stocks for IMMEDIATE SHIPMENT!

TWISTING—WINDING—BRAIDING
KNITTING—ROPE MACHINERY

90" RACHELLE KNITTING MACHINE
MAKES CLOTH 90" WIDE, SUCH AS FISH NETS, LAUNDRY BAGS, DISH CLOTHS AND HUNDREDS OF ITEMS

BRAIDING MACHINES of all types for use in the manufacture of parachute cords, military cords, flat tapes, rugs, elastic tapes and braids, wire cords and braids, etc.

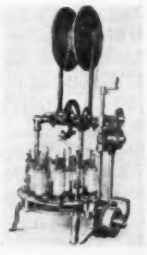


TWISTING MACHINES, in various makes, for hundreds of uses such as: cords, twines, rope, guimpe, wire, etc.

KNITTING MACHINES for use in the manufacturing of nettings, cloths of all types, rug materials, curtains, elastic girdle fabrics, hosiery webbing, shoe cloths, pocketbook materials.

WINDING MACHINES of all types and makes for threading, winding and spooling.

We have been handling the above type of equipment for the past 20 years and solicit any and all inquiries for anything in textiles.



**All the above priced reasonably for quick sales. Quite a few of these knitting and braiding machines are set up on our floors, where all the machines are located. What we mean by set up, is the machines are in operating conditions with material such as nets, rugs, dish cloths, cords, flat plain and fancy braids in them, for inspection and operation.**

# ROBERT SOLOMON & CO., Inc.

**TEXTILE EQUIPMENT SPECIALISTS**

**162-168 Greene Street** **New York, N. Y.**

# LIQUIDATING

## EXCELLENT TEXTILE EQUIPMENT READY FOR IMMEDIATE SHIPMENT

### SPECIAL

4—James Hunter Squeeze Rolls, 2 Top and 1 Bottom Rubber Covered Rolls, 50" Face, Hand Screw Lever Set, with Countershaft

5—James Hunter Squeeze Rolls, 16" Rubber Covered Top and Bottom Steel Roll, Hand Screw Lever Set, with Countershaft.

### COMPLETE RAYON WEAVING PLANT

260—Draper Automatic Looms, Modern Slashing, Warping, Winding, Auxiliary Equipment.

### KNITTING

160—Scott & Williams Nye & Tredick Circular Ribbers, Range 10" 10 cut 8 feet to 23' 14 cut 12 feed.

New Wildman, Scott & Williams and Nye and Tredick Needles, in original boxes.

### SEWING

**Union Special**

52800
35300
9900
15400
16800 with Pullers

**Wilcox & Gibbs**
All styles

**Union Buttons**
Button Sewers

**Singers**
All styles

**Metropolitan**

192-5 elastic machines with elastic pullers.

### WATER SOFTENING AND FILTRATION EQUIPMENT

2—Permutit Water Softeners, 10' Diameter x 16' Long, with Interconnecting Piping, Valves, Meters and large quantity of Zeolite.

2—Permutit Type C, Electric Chemical Feeding Devices, Constant Feed.

1—Permutit Vertical Water Softener, 5' x 6' with Valves, Piping and Zeolite.

7—Hungerford & Terry Horizontal Steel Pressure Water Filters, 8' x 30', 8,000 Gallons Capacity, 5/8" Plate, equipped with Cross Piping 8" Valves and all accessories.

1—Filter Everson 42" x 48".

1—Filter Permutit 6'6" x 6'.

1—Permutit Single Vertical Water Softening Unit, Steel Tank, Size 10' x 10', Oval Slide Manhole Opening, with Trident 3" Water Meter, Safety Valve, and 4 Gate Valves 5#.

### COUNTERS

34—Veeder Root Pick Counters.

### SPECIAL ENGRAVING EQUIPMENT

7—John Hope 50" Pantograph Machines, Double Bar.

10—John Hope 48" Pantograph Machines, Double Bar.

1—John Hope 45" Pantograph Machine, Double Bar

### BELTING

1—Lot Wood and Fibre Variable Speed Drive Belts.

### FINISHING

**Beamer**

1—Van Vlaanderen 50", Beaming and Rolling up Machine. Friction Drive.

**Bleach House Equipment**

2—8' x 9' Kiers.
2—10' Log Washers.
2—Bleach House Squeezers.

**Boil Off**

1—Van Vlaanderen 3 Nip Continuous Open Soaper, 3 sets of Brass Nip Rollers, 60" face.

**Calenders**

1—Van Vlaanderen 3 Roll Finishing Calendar, Wool Felt Bowls, Large Diameter.
3—Textile 50" 5 Bowl Calenders.
2—Textile 45" 3 Bowl Friction Calenders.

**Can Dryers**

1—set of 20 Cans Textile Copper Cans 23" diameter, 54" face, Vertical Stack.
1—set of 18 Cans, 23" x 45" face, Vertical Stack.
1—7 Can Butterworth Copper Cans, 23" diameter, 80" face.
1—Textile Can Drying and Rolling Up Machine, Copper Can 36" diameter, 50" face.
1—set of Textile Dry Cans—15 Cans—23"x78"—Loriz.

### CALENDER ROLLS

1—Paper Covered Silk Calender Roll, 50" Face, 16¼" Diameter, 59¾" Between Shoulders, Diameter of End Shaft 4 15/16", Length of End Shaft 6¾".

1—Steel Calender Roll, Newly Cotton Covered, 50" Face, 20" Diameter, 61" between Shoulders, Shaft 9" each End, Diameter 6 15/16".

6—Steel Schreiner Calendar Rolls, 42" and 46" Face.

### SPECIAL

800—Butterworth Tentering Frame Top Opening Brass Face Clips, No. 99.

500—Butterworth Tenter Chain Clips, Type O-O Top Opening, Brass Faced Clips.

**Decators**

1—Parks & Woolson, 72" Semi-Decater with Blanket, Nash Vacuum Pump and Motor.

**Doublers**

2—Parks & Woolson 54" Doubling and Reeling Machines.
1—Van Vlaanderen 60" Doubling and Winding Machine

**Dye Becks**

1—Monel Metal Solid Tub Dye Beck, 5' with Monel Reels.
2—Stainless Steel Lined Sample Dye Becks.
1—Van Vlaanderen 4' Stainless Steel Lined Dye Beck.
1—Van Vlaanderen 19' Cypress Dye Beck.

**Dye Jiggs**

6—Textile Copper Lined Dye Jiggs 45" Face.

**Dye Padder**

1—Butterworth 2 Roll Dye Padder, Brass and Rubber Roll Motor Driven.

### SPECIAL

5—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber Covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive.

1—De Lavel Worm Reduction Gear Unit, direct connected to Lincoln 10 H.P. A.C. Motor, 550 Volts, 60 Cycle, 3 Phase, 1200 R.P.M., with Control.

1—Battery of 4 Morrison Stainless Steel Dye Jiggs, 50", A.C. Motor Drive.

**Embossers**

1—Textile Two Roll Embossing Calenders, 12" face, One Roll Gas Heated, Pulley Driven, Complete with Table and Winder.

**Extractors**

1—American 48" Open Top Motor Driven Extractor, Copper Basket.
3—Hercules 60" Motor Driven Extractors, Copper Basket.

**Folders**

1—Eastwood Gray Goods Folder, 60" Wide.
3—E & H Flat Folders, 45" to 60" Wide.

### GAS SYSTEM

1—Kemp Automatic Gas System, with Rotary Pressure Blower, By-Pass Valve, Back Fire Preventer, and Expansion Chamber

### GEARS

1—Lot Bronze Machine Gears, Assorted Sizes (834 pounds).

### METER

1—General Electric Flow Meter, Type F-12.

### KETTLES

6—Copper Steam Jacketed Mixing Kettles, Equipped with Double Motion, Bronze Agitators, 70 to 350 Gallons Capacity.

**Palmer**

1—65" Van Vlaanderen Palmer Tenter Quetsch Unit, with Stainless Clips and Housing.

**Printing**

1—Werner 50" Single Color Print Machine.
1—Rice, Barton & Fales 7 Color 50" Print Machine.
2—Rice, Barton & Fales, 42" Print Machine, 8 and 11 color.

**Tenter Frames**

1—30' Windsor & Jerauld Open Tenter Frame with Steam Heating Coils.
1—60' Windsor & Terauld Tenter Frame with Proctor & Schwartz Housing.

### SPECIAL

1—Butterworth 42" Hydraulic Schreiner 2 Bowl Calendar, equipped with Cotton and Steel Engraved Rolls, Gas Heated Friction Unrolling and Batcher, Tension Rolls, Complete with Accumulator and Pump, direct connected to General Electric 3 H.P. A.C. Motor, 550 Volts, 60 Cycle, 3 Phase, 900 R.P.M., Type M.T., with Drum Controller, Magnetic Switch and Grids.

REMEMBER
Republic Textile
EQUIPMENT COMPANY
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

"WE'RE THE DOCTOR"—*not General Practitioners—but* SPECIALISTS in our particular field, *which is*

# HOSIERY MILL MACHINERY

## LADIES' HOSE MACHINES

32—S&W Model K 3½" 340-N. 70-ga. 13-step Spirals 190,000 rebuilt

60—S&W K Spirals 3½" 300-N. 70-ga. as above, #190,000

10—S&W Model K Spirals 3½" 280-N. 70-ga. as above

10—S&W Model K Spirals 3½" 260-N. 54-ga., as above

40—S&W Model K 3½" 340-N. 70-ga. plain Machines with cradle sole, graduated stitch device, etc. #80,000 to 130,000 approx.

60—S&W K 3½" 300-N. 70 ga. as above

50—S&W K 3½" 280-N. 70-ga. as above

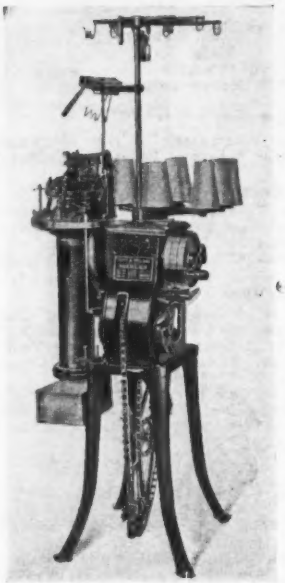
42—S&W K 3½" 260-N. 54-ga. as above

50—S&W K 3½" 240-N. 54-ga. as above

20—S&W K 3½" 220-N. 48-ga. as above

10—S&W K 3½" 200-N. 48-ga. as above

6—S&W K 3¼" 280-N. 70-ga. as above



## MEN'S HOSE MACHINES

14—Spiers Autoswift 4" 126-N. English rib machines

17—Standard L 3½" 220-N. Wraps

150—Banner 3½" 200-N. Half Hose Mchs.

75—Banner 3½" 220-N. Half Hose Mchs.

25—Banner 3½" 220-N. 48-ga. Mch. Wraps with stripers & rubber tops

40—S&W B-5s 3½" 200-N. with striper

30—S&W B-5s 3¾" 176-N. set up on Army socks

250—Asstd. Wildman Ribbers for Men's hose 3¼" to 7" diameter

150—Brinton & Fidelity ribbers, all types

## CHILDREN'S HOSE MACHINES

30—Banner Infants 70-ga. footers 2¼" 180-N. to 3¼" 240-N.

135—Banner Footers 2" 110-N. through 2¼" 120-N., 2½" 130-N., 2¾" 144-N. all 48-ga. units

400—Asstd. Ribbers—all makes and sizes for children's hose & anklets

## DYEING & FINISHING EQUIPMENT

1—Smith Drum 200 lb. 6-pocket Rotary Monel Metal dye machine motor driven

1—American 300 lb. Rotary 9-pocket Dye Machine

5—Proctor & Schwartz 30-board type Boarding Machines with strippers

1—Textile Pre-Boarding Machine (for nylons)

1—48" Amico Extractor open top motor dr.

1—42" Amico Extractor open top motor dr.

7—28" American curb extractors motor dr.

500—Asstd. Phila. Metal Boarding Forms

600—Asstd. Paramount Ladies' Boarding Forms

## LOOPERS, SEAMERS, ETC.

40—Sotco 24-26-28-30 point Loopers

12—Wright 22-24-26-28 point Loopers

6—Record 32-point Loopers

15—Union Special 41300 Seamers

100—Union Special 41200A Seamers

4—Merrow 60 U & 60 UD Seamers

3—Textile Inspecting Arms with tables

4—Ammon Inspecting Arms with tables

**We maintain the most complete stocks of used hosiery mill equipment in America. Everything from a needle to a complete plant.**

## The MORRIS SPEIZMAN COMPANY

**508-14 West 5th St., Charlotte, N. C.** **Phone 2-3463**

Ask McDOWELL ASSOCIATES

*For the Answer to* POST-WAR TEXTILE MACHINERY PROBLEMS

**USED** *"Buy With Confidence"* **REBUILT**

## SINGLE UNITS TO COMPLETE PLANTS

***Immediate Delivery***

**DYEING AND FINISHING:**

1—BALER #30 Economy hand operated.
2—BATCHERS 2 roll units 43½" & 66".
2—BRUSHING Machines 36" and 54".
2—CALENDERS FRICTION 34" & 42" 3 roll units.
8—CALENDERS 38" to 100" 3 to 6 roll units.
3—CALENDERS EMBOSSING 43½" to 62".
4—CAN DRYERS 50x23, 75x30, 81x23 and 114x23.
1—DAMPENER, Decaturs Semi Unit 66".
2—DECATURS 68x32, 72x36, pumps mtrs.
1—DECATUR Full 72x24, pump & mtrs.
4—DOUBLERS 40" to 66" cloth with clocks.
1—DOUBLING & FOLDING Unit 60" cloth, adjustable folds 18" to 40".
3—DRY HEADS & 11 Aluminum Baskets.
2—DRYERS, LOOP Unit Heaters.
1—DRYER, NET 60" width complete.
2—DRYERS, PIN cloth 62" width.
1—DRYER, RAW STOCK 60' long.
9—EXTRACTORS, 28" to 60" Baskets.
3—FOLDERS, Flat & Ceiling types 40" to 66".
2—FULLING MILLS #10 Double Compartment.
4—JIGGS 50" to 60" cloth.
5—MANGLES 40" to 66" 2 & 3 roll units.
2—NAPPER GRINDERS 80" & 90" rolls.
5—NAPPERS D. A. Woolens 66" to 90" 20 to 36 rolls.
3—NAPPERS D. A. Knitgoods 72" & 80" 20 rolls.
3—NAPPERS D. A. Cotton & Mixtures 80" 20 rolls.
1—NAPPER S. A. Woolens 90" 14 rolls.
1—PACKAGE DYEING MACHINE 100-lb.
1—PACKAGE & RAW STOCK Combination Dyeing Machine.
2—PALMERS 63" and 84" with Blankets.
2—PRESSES Rotary Steam 66" Double Beds.
3—QUETCHES 44" to 60" 3 roll units.
1—ROLLING & MEASURING Unit 66" cloth.
1—SEWING MACHINE 50" Railway type.
3—SEWING MACHINE Rotary Foot Power.
2—SCOURING Units, YARN with squeeze rolls.
2—SLASHERS 5' & 7' two cylinder units.
9—SHEARS 36" to 84" Single & Double Blade Units.
3—PAIR SQUEEZE ROLLS 60" to 76" face.
1—STEAM LUSTERING MACHINE 74x18 with Crab roll.
1—TIGER 60" Single Brush.
2—TENTER FRAMES Pin 30'x60" and 30'x72".
2—TENTER FRAMES Clamp 30'x60" and 40'x50".
1—TUBER 60" Cloth with measuring clock.
1—Open Width WASHER 66" with Squeeze rolls.

**CARDING, SPINNING & WEAVING:**

3—Bramwell FEEDS for 40" Cards.
1—CARD Single Cylinder 48x48.
3—CARDS Double Cylinders 48x48.
1—CARD Three Cylinders 48x60.
1—CARD Four Cylinders 48x60.
1—CARD Flax Tow Finisher 72x60.
1—CONE ROVER 36 Spindle.
1—GARNETT 20x60 Double Cylinder.
1—GARNETT 30x60 Single Cylinder.
6—INTERMEDIATES 9x4½ and 10x5.
1—GILL BOX 6 Spindle Intersecting.
50—Draper "E" LOOMS 35½" Reed Space.
80—Draper "K" LOOMS 42" Cloth.
75—C&K 2x1 Automatic LOOMS 37½" to 42" Reed Space.
50—C&K 4x1 Automatic LOOMS 42".
47—C&K 4x1 Automatic LOOMS 45".
85—Draper "D" LOOMS 79" Reed Space.
60—C&K 4x4 LOOMS 25 harness 82".
40—C&K 4x1 Automatic LOOMS 4 harness 82".
10—C&K 4x4 LOOMS 25 harness 92".
12—C&K Automatic Cam LOOMS 92".
1—LUMPER 48".
8—MULES 1⅞" Gauge to 2⅛".
1—OPENER 72x24 Double Cylinder.
1—PICKER 36" with feed.
3—QUILLERS 2½" to 2¾" Gauge.
1—SHREDDER, cylinder 48x30.
6—SLUBBERS 9x4½ and 12x6.
8—SPINNERS Doubling & Twisting.
6—SPOOLERS for 40" Jackspools.
1—SPOOLER 6 drum Multiple with creel.
1—TWISTER 72 Spindles 4½" Gauge.
1—TWISTER 160 Spindles 3½" Gauge.
8—TWISTERS 216 Spindles 3" Gauge.
2—TWISTERS Novelty 224 Spindles 3½" Gauge.
2—WARPERS 54" and 60" for 540 ends.
2—WINDERS, Cop 30 Spindle units.
1—WINDER Foster #12 skein to cones 40 spindles.
2—WINDERS Skein to Bottle 40 spindle units.

**NORMAN M. McDOWELL** *ASSOCIATES*

***LIQUIDATIONS—APPRAISALS***

**MELROSE 5-1772-3**

342 East 142nd St., Bronx, N. Y.

# "BAY STATE" BEST SERVICE

## for TEXTILE Equipment and Supplies

For Victory
BUY MORE
WAR BONDS

★ ★ ★

For Prompt
Action
in the
TEXTILE
FIELD . . .

6—S-L Slubbers, 12x6, 68 spindles, 10¼" gauge.
5—Whitin 10" Card Coilers.
2—D&F Mules, 2½" gauge, 280 spindles, extra heavy.
3—Ball Warpers.
4—Payne Winders, 40 spds., winds from spools.
6—#50 Universal Winders, anti-wear Tensions, with Waxing Attachment.
1—D&F 86" Dressing Frame, with Jack Spool Stand and Reed.
1—Whitin Skein Reel, 72".
1—Sargent Yarn Conditioning Machine, copper hood and Apron.
1—C&M Silk type Folder, 60", adjustable 1 to 1¼ yard folds.
1—C&M 72" Cloth Roll Cradle.
1—38", 2 rubber roll Padder.
1—Tolhurst 48" Extractor, copper tinned basket, overhead belt drive with Grand Rapids motor driven loading device, 220 volt.
1—J. Hunter 66" Vacuum Extractor, with #4 Nash Pump and 20 h.p., 220 V Motor and lead lined piping.
1—Sturtevant Multivane Fan, size 5, design 3.
1—Pittsburg Aut. Gas Water Heater, size 55, almost new. Slasher Cylinders, 6 ft. and 5 ft. dia.

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50,000—4¾" x 6½" traverse SPOOLS, heads ¾" thick, metal bound, heavy construction. For TIRE or COARSE Yarn.

*STEEL SPLIT PULLEYS—BEAMS—BOX TRUCKS*

BOBBINS—Slubber, Intermediate and Fine Speeders, Twister, Automatic Loom, Warp Spinning, Winder Cones 7" Spools all sizes.

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OUR OFFICE, PLANT AND SHOWROOM

## MACHINERY CO.
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Belting and Transmission Equipment
Machine Tools—Mill Motors
Motors and Generators
Power Plant Equipment

**WE BUY**
**Complete Plant**
**Equipment**

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*To Complete War Contracts*
*—to switch to other production*
*—to sell un-wanted Equipment*
*—to make replacements—*

**CONTACT**

# McKITTRICK

We own and offer **LARGE STOCK** of used Textile Machinery

### CARD FEEDS

3—Bramwell 48" Worsted
2—Bramwell 60" Woolen.
1—J. Smith 60" Garnet.

### GILL BOXES

1—S.L. Sql Baller Intersecting.
3—T&W Sql Hd. Dble Baller-open Fine.
1—T&W Sql Baller-open ½" p.
2—P.S. Sql Baller ⅝" p.
1—P.S. Sql Hd. Dble Baller ½" p.
1—P.S. Sql Can ¾" p.
1—H&S Dble Can ½" p.
1—H&S Dble Can 7/16" p.

### WSTD DRAW BOXES

1—P.S. 12 spdl x 8" p. 10x5.
1—P.S. 8 spdl x 9¼" p. 10x5.
1—P.S. 8 spdl x 10¼" p. 14x7.
1—P.S. 6 spdl x 11¼" p. 14x8.

### TWISTING

4—S.L. 200 spdl x 3½" p. Dolly Roll Type Cap Trap.
3—H&S 192 spdl x 3½" p. Dolly Roll Type Cap Trap.
6—H&S 168 spdl x 4" p. Dolly Roll Type Cap Trap.
1—Collins Bros. 160 spdl x 3½" p. x 2¼" Ring Fancy Twister for woolen.

### WINDING

1—Foster 80 spdl x 6" tr Mdl 12 Tube Winder Belt drive.
2—Foster 100 spdl x 6" tr Mdl 30 Tube Winder Motor driven.
2—J&B 120 spdl x 1¾" ga Jack Winders.

### YARN STEAMER

1—C. G. Sargent Yarn Conditioner. Ex Apron.

### WOOLEN MULES

2—J&B 240 spdl x 1¾" ga Hvy spdls for 9" Auto Bobbins.

### LOOMS

6—C&K Veribest 82" 4x1 Box Automatic. Motor driven. L.O. 12,603. 8¾" Bobbin. Ex.
4—C&K 92" 4x1 Box Automatic. Motor drive. L.O. 12,457. Large Shuttle.
5—C&K Veribest 92" 4x4 Box Plain. Motor drive. L.O. 12,897.
2—Knowles 82" 4x4 Box Plain. Motor drive.
1—C&K 82" 4x4 Box x 30 Harness. Motor drive. Ex.
6—C&K 72" 4x4 Box x 20 Harness. Motor drive. Ex.

### ELECTRIC MOTORS

all 550v—60c—3p

| Quantity | HP. | Quantity | HP. |
|---|---|---|---|
| 16 | 1 | 12 | 40 |
| 150 | 2 | 11 | 50 |
| 8 | 3 | 17 | 60 |
| 11 | 5 | 18 | 75 |
| 9 | 7½ | 11 | 100 |
| 5 | 10 | 5 | 125 |
| 2 | 15 | 7 | 150 |
| 6 | 25 | 4 | 200 |
| 4 | 30 | | |

600 HP. DC. Motors
Lots of 220V Motors
400 Starters and Comps.
Send your inquiries.

### CLOTH FINISHING

2—Gessner 66" Rotary Cloth Presses. Jumbo Type.
1—D&F 80" x 14 Roll S.A. Napper. Belt drive.
2—P&W 66½" Mdl A Dble Shears.
1—P&W 42½" Mdl A Dble Shears.
1—C&M 63½" Single Shear with spare revolver and ledger blade.
1—C&M 60" Single Cutter Velvet Shear—Low Pattern.
2—P&W 66" AWC Type Measuring Machines.
1—Windle 66½" Doubling & Winding. No measuring.
1—Voelker 64" Dewing Machine.
1—P&W 63" x 2 cyl Steam Brush. Folder.
1—Gessner 72" Full Decater with Vacuum pump, carriage and winder. Ex.

### TAPE CONDENSERS

1—Cashiko 60" 4 Bank Sql Apron 128 good ends.
1—Rich-Hartmann 60" 4 Bank Sql Apron 96 good ends. Complete with doffer and parts to attach same.
4—National Engineering 48" 4 Bank Sql Apron 96 ends. (2 have 36" doffers.)

### 72" IRON CARD ROLLS

4—Rolls 50" dia. x 72".
3—Rolls 40-41" dia. x 72".
4—Rolls 36-37" dia. x 72".
3—Rolls 30" dia. x 72".
1—B. S. Roy 72" Traverse Grinder. Lots of smaller Rolls—72" wide.

### EXTRACTORS

1—Hercules 48" Motor Driven 550 v—60 c—3 p.
1—VanVlanderen 60" Motor Driven 550 v—60 c—3 p.

*This is only a partial list of the machinery and equipment we own and offer for sale. Send us your inquiries, also send listings of material for sale.*

**APPRAISALS – LIQUIDATIONS**

*Est. 1922* **FRANK G. W. McKITTRICK CO.** *Inc. 1935*

**USED WOOLEN AND WORSTED MACHINERY**

60 FLETCHER ST. Phone Lowell 6391 LOWELL, MASS.

## FRANK W. WHEELER CO.
USED and REBUILT
# TEXTILE MACHINERY
# FOR SALE

### Carding and Spinning Machinery

| | |
|---|---|
| FEEDS | Card, 60" Bramwell |
| FLOCK CUTTER | Curtis & Marble |
| DUSTERS | Schofield, Box, 48" |
| GRINDERS | Card and Napper, various sizes |
| PICKERS | Gerry, 20" opening |
| | F. Franke & Co., 28" opening |
| | C & M 36" Atlas type Mixing |
| | Rag |
| | Spencer Auto Oiler, 48" |

### Warping and Winding Machinery

| | |
|---|---|
| QUILLERS | Whitin, 378 spindles, 2 and 2½" ga. |
| SPOOLERS | Worcester Comp. 6 Drum, 48 ends |
| WARPERS | Pin and Pinless, any size |
| WINDERS | #50 Universal, rebuilt to your order |
| | #90 Universal, rebuilt to your order |
| | #180 Universal, 8 x 8 Super Coners |
| | Lever 40 Spindle Cop or Butt |

### Weaving Machinery

| | |
|---|---|
| BUTTS | |
| CARD CUTTERS | Royle, 600 hook, piano type |
| CHENILLECUTTER | D. Lever |
| HARNESSFRAMES | 80" |
| LOOMS | 82" C & K 4 x 4 box, 25 harn. |
| | 92" C & K 4 x 4 box, 25 harn. |
| | 85" Knowles, Automatic |
| SPOOLS | 4 x 6, wood |
| | 4½ x 6", wood |
| | 2⅞" x 3⅝" Sipp |

### Dyeing and Finishing Machinery

| | |
|---|---|
| BRUSHES | P & W 60" with steamer, 2 cyl. |
| | C & M 78" with steamer, 2 cyl. |
| CALENDER | 3-roll, 50" wide |
| CONDITIONING | Sargent Filling Yarn Cond. |
| | Sjostrom cloth finishing |
| DOUBLING AND FOLDING | Windle |
| | P & W, 66" |
| DRYERS | P & S, Overhead, 11' x 65' |
| EXTRACTORS | A. T. & M. Co. 36" underneath belt drive |
| | A. T. & M Co. 42" underneath belt drive |
| | 48" Fletcher, motor drive |
| | Gessner Vacuum |
| | Werner Vacuum, single pump |
| FOLDER | E & H 68" wide, Yard folder |
| FRINGING MCHS. | Rehfus |
| MEASURING AND INSPECTING | P & W 6" mchs. |
| MERCERIZERS | Smith Drum, 16 arm & 24 arm |
| NAPPERS | Woonsocket 82", D. A., 20 rolls |
| | Gessner, 72", S. A., 20 rolls |
| PRESSES | Gessner, 66", Heavy duty, Jumbo type |
| | Gessner, 72", Century type |
| | Gessner, 80", Century type |
| | Voelker, 82" double bed |
| | E. Gessner, 66" |
| ROLLING AND MEASURING | P & W, Double |
| | C & M, 36", Open |
| | 60" Open |
| SHEARS | P & W 66", Model A, 2 cyl. |
| | P & W 66", Model B, 2 cyl. |
| | C & M 66", 2 cyl. |
| | P & W 66", for Plush |
| | C & M 66", for Plush |
| SINGER | C & M, 76", 2-burner, Gas |
| | C & M 64", 2-burner, Gas |
| STEAM FINISH | 2 cyl., Cloth |

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**Philadelphia, 24, Pennsylvania**

# 100 DRAPER MODEL E LOOMS

**Motorized**

Numerous other specials at very attractive prices. Wire or phone us your requirements and what you have to offer.

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# SILK MACHINERY EXCHANGE
**24 SPRUCE STREET • PATERSON, N. J.**

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Parkhurst 48 in. duplex BURR PICKER
2—Proctor & Schwartz RAW STOCK DRYERS
3—WHITIN 50 inch Card FEEDS
Bruce Power DIE CUTTING PRESS
15—TOMPKINS KNITTING TABLES

**EXTRA-CYLINDERS**
(Both Spring & Latch Needles)
**KNITTING PARTS**
**BURR-WHEELS**
(All makes and Gages)
2—DAVIS & FURBER 80 in. NAPPERS
PAYNE WINDERS & BOTTLE BOBBINS
2—McCreary DOUBLE ROLL BRUSHERS
Cameron type SLITTING MACHINES
Firsching type SLITTING MACHINES
KNITTING MACHINES—ALL KINDS
**Geo. E. Smith Textile Machinery Co.**
P. O. BOX 46 COHOES, N. Y.

## FOR SALE
1—Sargent Yarn Conditioning Machine
2—Tolhurst 48" Extractors, belt drive
1—Tolhurst 48" Extractor, motor drive
2—Harwood Feeds 48" and 1—40"
4—Sharpless Centrifuge, Model 4-W, motor drive
25—Stafford Shuttle Changing Dobby Worsted Looms 45" reed space
60—Stafford Shuttle Changing Cam Worsted Looms 45" reed space
90—Stafford Shuttle Changing Dobby Worsted Looms 45" reed space
48—Draper Cam Looms Worsted 43" reed space
14—Crompton & Knowles Worsted Looms 78" reed space 4 x 4 box
1—Montford Double Acting Napper 90"—36 rolls
**JAMES SPEED & CO., INC.**
**179 Summer Street, Boston, 10, Mass.**

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FACTORY APPRAISALS
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## BUTTERWORTH CALENDAR
**7 ROLLS—80" FACE**
3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.
**AMES BAG CO.**
10 EAST 40TH ST. NEW YORK CITY

## DRYER FOR SALE
1—Sargent Wool Dryer—year 1924, Model #1009. Width 9' 2½" overall. Apron 72" wide, 4 fans. Sectional Apron. With Feeder for Dryer. Width of Feeder 75". Apron 72" wide, 9' long. In excellent condition. Is now in operation and can be inspected by appointment.
**JOHN CLISHAM**
TEXTILE MACHINERY
Castor & Devereaux Ave. Phila. 24, Pa.
Delaware 7042

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1—Butterworth 3 bowl 65" face Calender, having two 20" dia. combination bowls and one 14" dia. cast iron bowl
**JAMES E. FITZGERALD**
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10 Purchase Street, Fall River, Mass.

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KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
**C. M. FRENCH**
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FOR SALE
## LOOMS
four light webbing looms, double deck, one horse power motor, cam motion, 19'8" between frames, two 72 space 2¼" reed space, two 42 space 3½" reed space.
**JOHN SIDEBOTHAM INC.**
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## TEXTILE MACHINERY
USED OR REBUILT
Spinning—Weaving—Dyeing
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*Specialists in Export Trade*
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Cable: Maquintex—Code Bentley's

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## WOOL MIXING PICKER
48" Davis & Furber (1940) equipped with 12 bar cylinder and four feed-rolls. Machine rebuilt & guaranteed like new.
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**USED AND RECONDITIONED TEXTILE MACHINERY AND SUPPLIES**

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TEXTILE MACHINERY OF ALL TYPES

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IMPORTER, DEALER AND MANUFACTURER

TEXTILE MACHINERY AND APPLIANCES

NEW AND USED

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# GAINES TEXTILE MACHINERY CO.

*Dealers in Rebuilt and Guaranteed Yarn Winding and Spinning Machinery*

141-45 West 17th Street  New York, N. Y.

## L. J. McCAFFREY & SON, INC.

**Spinning Rings & Holders**

**RINGS**

50—1-5/16" #1 Single Flg. Rgs.
18,960—1⅞" #1 Single Flg. Rgs.
100—1½" #1 Double Flg. Rgs.
2,610—1-9/16" #1 Double Flg. Rgs.
17,500—1⅝" #1 Double Flg. Rgs.
100—1⅝" #2 Single Flg. Rgs.
4,420—1⅜" #2 Double Flg. Rgs.
4,200—1¾" #2 Double Flg. Rgs.
200—2" #2 Double Flg. Rgs.
7,500—1⅜" #1 Single Flg. Common Rgs.

**RINGS—WITH HOLDERS**

450—1½" #2 Flg. Rgs. with C.I. Hold.
3,800—1½" #1 Double Flg. Rgs. with C.I. Hold.
1,050—1⅝" #2 Double Flg. Rgs. with C.I. Hold.
1,603—1⅝" #1 Double Flg. Rgs. with C.I. Hold.
600—1¾" #2 Double Flg. Rgs. with C.I. Hold.
8,600—1⅞" #1 Single Flg. Rgs. with C.I. Hold.
6,600—1-5/16" #1 Single Flg. Rgs. with Plate Hold.
720—1⅜" #1 Single Flg. Rgs. with Plate Hold.
9,950—1½" #1 Double Flg. Rgs. with Plate Hold.
1,820—1-9/16" #1 Double Flg. Rgs. with Plate Hold.
1,500—1¾" #1 Single Flg. Rgs. with Plate Hold.
4,600—1½" #2 Double Flg. Rgs. with Plate Hold.
11,700—1¾" #2 Double Flg. Rgs. with Plate Hold.
5,990—1⅜" #2 Flg. Rgs. with Plate Hold.
10,680—1⅝" #2 Double Flg. Rgs. with Plate Hold.
900—1¾" #2 Single Flg. Rgs. with Plate Hold.
32,500—1¾" #2 Double Flg. Rgs. with Plate Hold.

**HOLDERS**

1,800—1⅜" Cast Iron Holders
7,000—1½" Cast Iron Holders
5,496—1⅝" Cast Iron Holders
3,920—1-11/16" Cast Iron Holders
29,580—1¾" Cast Iron Holders
600—1⅞" Cast Iron Holders
400—1-15-16" Cast Iron Holders
19,950—2" Cast Iron Holders
350—2¼" Cast Iron Holders
1,400—2½" Cast Iron Holders
600—1⅜" Plate Holders
1,200—1-7/16" Plate Holders
1,680—1½" Plate Holders
5,410—1-9/16" Plate Holders
8,900—1⅝" Plate Holders
2,800—1-13/16" Plate Holders

**Box 495, Pawtucket, R. I.**

## FOR SALE

# TEXTILE MACHINERY

1—**C. G. Sargent**—7', 10 section, 3 apron Carbonizing Dryer with Feeder.
1—**Hunter**, 5', 6 section, 3 apron Carbonizing Dryer with Feeder.
1—**Sargent** Duplex Burr Picker 36"
2—**Smith & Furbush** Cards, 4 lickerin type, 2 cylinder 54 x 54. All iron except doffers and workers.
1—**Smith & Furbush** card, 4 lickerin type, 2 cylinders 50 x 54. Wood construction.
3—8 **Ball** Unballing Creels, 34" face.
3—**Hall & Stell** Double Can Gill Boxes, 7/16" pitch.
4—**Hall & Stell** 2 spindle Gill Boxes, 7/16" pitch, 14x9 bobbin.
1—**Hall & Stell** 4 spindle Draw Box, 12⅜" pitch, 14x9 bobbin.
1—**Hall & Stell** 6 spindle Draw Box, 11¼" pitch, 14x8 bobbins.
2—**Prince Smith** 6 spindle Draw Boxes, 11¼" pitch, 14x7½ bobbin.
1—**Hall & Stell** 6 spindle Draw Box, 10¼" pitch, 14x7 bobbin.
4—**Hall & Stell** 10 spindle Finishers, 7¾" pitch, 10x5½ bobbin.
12—**Hall & Stell** 24 spindle Flyer Roving Frames, 6" pitch, 8x4 bobbin.
2—**Prince Smith** 20 spindle Flyer Roving Frames, 7¼" pitch, 9x5 bobbin.
1—**Prince Smith** 24 spindle Flyer Roving Frame, 6" pitch, 7x3½ bobbin.
2—**Prince Smith** 48 spindle Flyer Roving Frames, 5" pitch, 6x3½ bobbin.
3—**Hall & Stell** Flyer Rovers same as above.
6—**Hall & Stell** 48 spindle Flyer Roving Frames, 4½" pitch, 6x3 bobbin.
2—**Prince Smith** 30 spindle Flyer Roving Frames, 5⅛" pitch, 6x3½ bobbin.
3—**Hall & Stell** 48 spindle Flyer Roving Frames, 4½" pitch, 5x3 bobbin.
2—**Hall & Stell** Cap Spinning Frames, 3½" pitch, 4" frame, 4" LFR.
4—**J. B. Farrar** 200 spindle spinning frames, 3½" pitch, 4" LFR.
6—**Hall & Stell**, 168 spindle Cap Spinning frames, 3¼" pitch, 3½" LFR.
8—**J. B. Farrar** 168 spindle Cap Spinning Frames, 3¼" pitch, 4" LFR.
7—**Hall & Stell**, 164 spindle Cap Trap Doll Roll Twisters, 3¼" pitch.
5—**Prince Smith**, 165 spindle Cap Trap Doll Roll Twisters, 3¼" pitch.
5—**Prince Smith** Universal Ring Trap Twisters, 160 spindles, 4 ply, 3½" pitch, 6 x 2¼" bobbin.
2—**Prince Smith** Universal Ring Trap Twisters, 188 spindles, 4" pitch, 6" traverse.
1—**Prince Smith** Universal Flyer Twister, 120 spindles, 6 ply, 4½" pitch, 6" traverse.
3—**Foster** Cone Winder Model 12, 80 ends.
1—**Foster** Doubler Model 25, 80 ends.
4—**Worcester** Warp Compressors, 6 drum, 40 ends, 22¾ scroll roll.
6—Single drum jackspoolers.
1—**Entwistle Ball** Warper Head. Reed for 560 ends. No creel.
24—**Lindsay Hyde** 50 to 55 ends Yarn Reels with adjustable swifts from 54" to 72".
1—**Prince Smith** single can preparing gill box, ¾" pitch, double cut screws. Practically new.

**JOHN CLISHAM**
*Textile Machinery*
Castor & Devereaux Ave. Phila. 24, Pa.
Delaware 7042

# MACHINERY FOR SALE

22—Bramwell Feeds
22—Dobson & Barlow Cards—12" Coilers
20—Deliveries Whitin Drawing
3—72 Spdle. Lowell Machine Shop Slubbers, 11 x 5½
6—176 Spdle. Saco-Pettee Fly Frames, 7 x 3½
35—208 Spdle. Saco-Pettee Spinning Frames —2¾" gauge
4—40 Spdle. Universal Doublers
20—16 Spdle. Saco-Lowell Camless Winders
2—100 Spdle. Foster Winders
24—Whitin Combers, 1908—Model C, 12" Coilers

**Amoskeag-Lawrence Mills, Inc.**
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# FOR SALE

- Printing Machines
- Dry Cans
- Calenders
- Quetches
- Extractors
- Tentering Frames
- Beamers & Tubers
- Doubling & Folding

Looms—Warpers—Winders—#90 & #50 Universals
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## THROWING MACHINERY FOR SALE LIQUIDATION

16 Universal Coners with motors for drive in pairs.
6 US Textile double deck twisters, motor for each deck.
11 Atwood C type double deck twisters. Individual motor.
4 Atwood 12 pin 5B spinners, 5" spacing. Individual motor.
5 Atwood 6 pin 5B spinners, 4¼" spacing. Individual motor.
5 US Textile Skein Winders. Individual motor.
Bahnson humidifiers, Saxemeyer bundle tyer, 2300 C.F.M. exhaust fan, canopy and duct, soaking tubs, Seriplane & Seriplane equipment—Bobbins and Bobbin trays, etc.

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# RIBBON MILL LIQUIDATION

65—Hi-Speed Fletcher ribbon looms, 15'8", 19' and 23'
Complete finishing & 10 color printing machines.
Large lot of blockers, sewing machines and auxiliary equipment for ribbon manufacturing.
Office equipment and supplies.
60 Draper Automatic looms—48"

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Armory 4-6777

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5-11 inch 6-14 inch
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**WANTED**

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**WANTED**

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Brandon, Man., Can.

**WANTED**

**Package Dyeing Machine**
**State type, capacity and price**

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(Continued from page 242)

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**WANTED**

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**American Wool Handbook**
**in usable condition.**
**Will Pay Original Price.**

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**Also Textiles of All Kinds**

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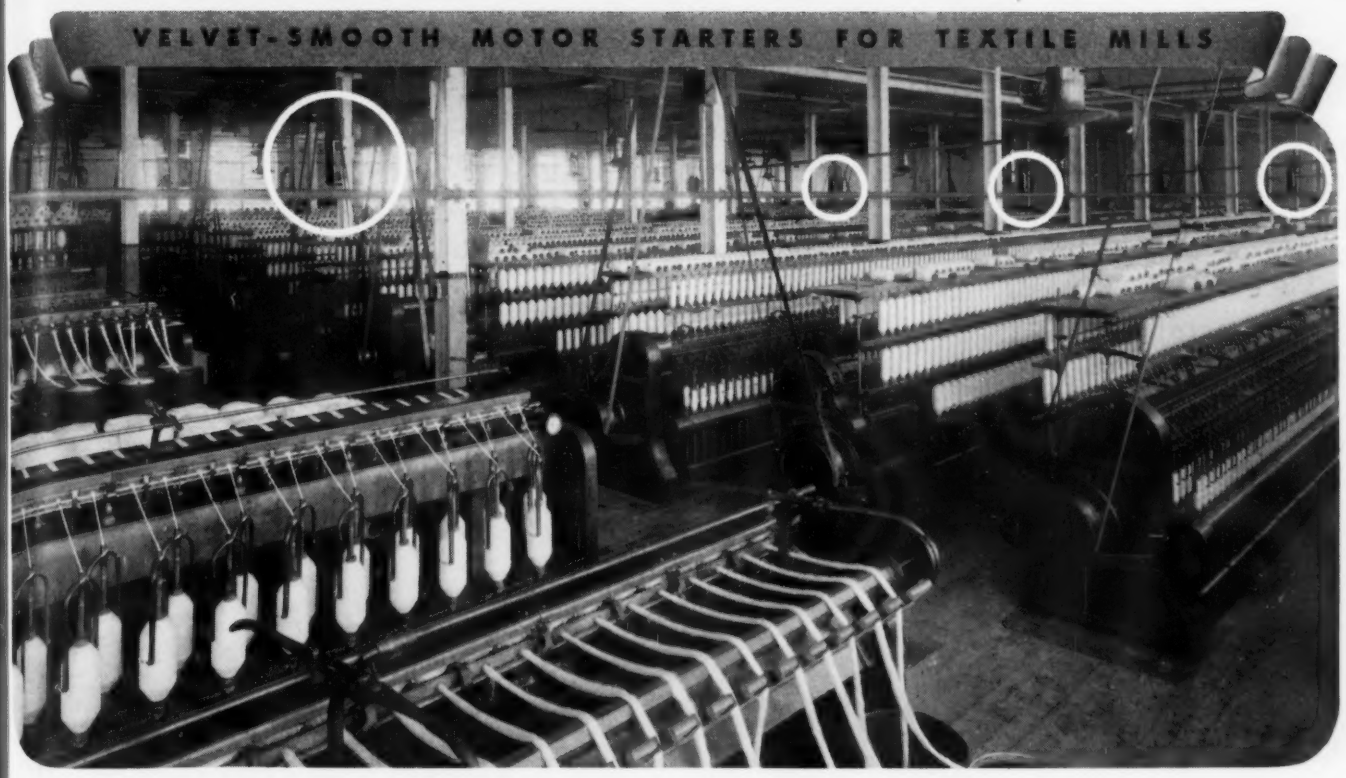
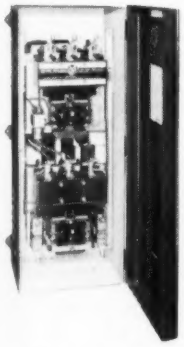



# SMOOTH STARTING REDUCES YARN BREAKAGE



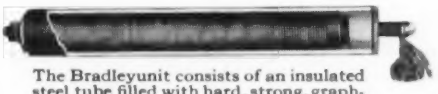
Open view of Bulletin 740 automatic reduced voltage starter.

There is less breakage, even on tender yarns, when you use Allen-Bradley velvet-smooth motor controls on textile machines. Spindles can be brought up to full speed with velvet smoothness. The starting tension on the yarn is so light and uniform that you have less breakage, less waste, and more production per machine.

Allen-Bradley resistance starters provide this stepless speed control with Bradley-unit compression graphite disc resistors, which permit very gradual increases of power input. There is no abrupt starting jolt . . . no violent current inrush or jerk when the starter is switched to the full speed position such as occurs with an ordinary starting transformer.

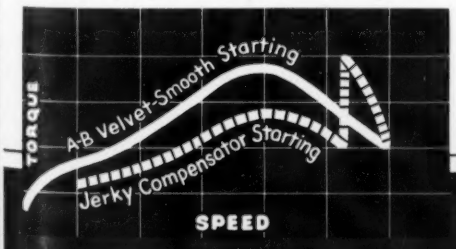
There are two types of A-B resistance starters—Bulletin 640 semi-automatic in which the operator controls the starting cycle with a hand lever, and Bulletin 740 automatic starter where the operator merely presses a starting button. Wherever velvet-smooth starting is needed, specify Allen-Bradley resistance starters.

Allen-Bradley Company
120 West Greenfield Avenue
Milwaukee 4, Wisconsin



The Bradleyunit consists of an insulated steel tube filled with hard, strong, graphite discs. Its resistance is controlled by varying the pressure on the discs.

Velvet-smooth starting of Bulletin 740 starter as compared with jerky starting of ordinary compensator.




*Send for Bulletin 740* today for complete details on how automatic reduced voltage starters can give you velvet-smooth motor starting.

A-B Quality

# ALLEN-BRADLEY
QUALITY

## VELVET-SMOOTH MOTOR CONTROLS

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*The Counting House of Industry*

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